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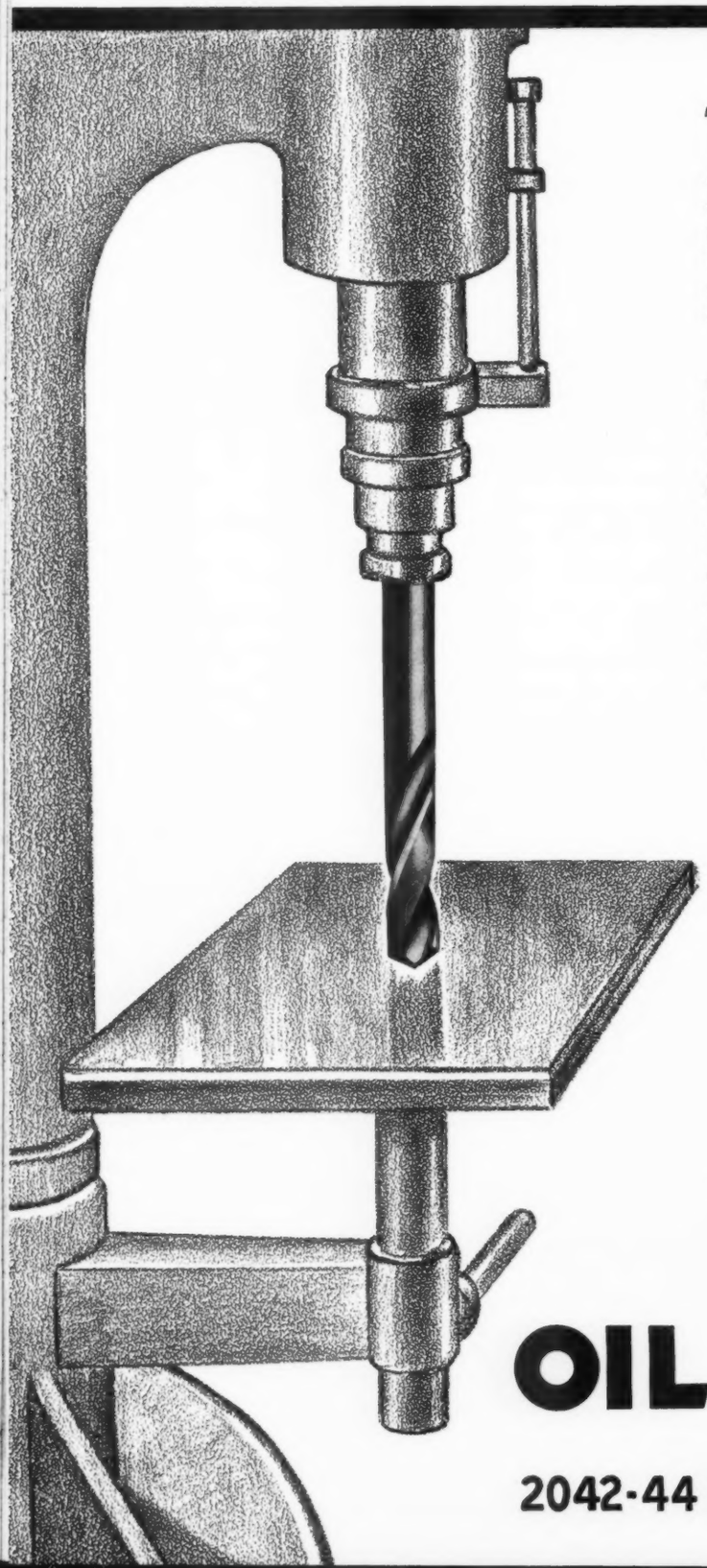
CENTURIES OF CHANGE AND IMPROVEMENT HAVE NOT CHANGED THE PRINCIPLE



THE FIRST machine tool drill reamer ever made incorporated the same principle of action that is today part and parcel of the Grant Reamer. Down through the years that same principle has been maintained without change, improvement, or alteration—simply because of the fact that inherently it is the *right* principle.

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Industry Cheerful Despite Stock Gains

THE first few days of April operations served to emphasize the optimistic attitude which appears general in regard to probable trends in oil markets. Crude production for the week ended April 3 showed little change from the previous week and the new month started with output within 30,000 bbls. daily of the all-time peak established in March.

Statisticians of the industry are hopeful that state allowables mean production will continue around present levels with declines preferred over increases in order to assure an improved balance between supply and demand by the end of the month. It is pointed out, however, that the pressure of new oil wells now being completed at the rate of 400 weekly will tend to raise output in several areas unless state allocation authorities, with the cooperation of operators, enforce their plan of operations announced last month for April.

Crude stocks from January 23 up until March 27, the period covered by the latest available report, increased 8,374,000 barrels, or at the average rate of 133,000 barrels daily. Practically all of the increase has been in East Texas, Oklahoma and Kansas. Gasoline stocks for the nine-week period ended March 27 increased 15,358,000 barrels, or 243,800 barrels daily. The decrease in stocks of fuel oil and gas oil has about offset the gains in crude oil inventories, so that the actual gain in the industry's inventories is represented in the increase in gasoline. It is maintained by most observers that these increases are not alarming, despite the fact that gasoline stocks appear headed for a total around 88,000,000 barrels before the steady reductions of the summer start.

Production 3,428,446
Decrease 6,429

The labor situation, which has caused several companies to maintain high operating schedules at their refineries owing to fear of shutdowns, will be more definitely known by the end of the month. Serious disruption in operations is not expected in any branch of the industry. Plant shutdowns, even if temporary, would bring heavy spot buying, with every indication that the gasoline tank-car market would tighten and advance quickly. While gasoline stocks are larger in most areas than they were a year ago, both large and small refiners are confining their sales to regular outlets, with no disposition to "unload" at this time.

Heavy drilling programs in prospect for the spring and summer months in all of the principal states are reflected in current reports. Completion of large wells in old fields continues to be outstanding, with a Yates pool completion showing a production of 4,188 barrels in one hour, an example of the past week. A new field apparently has been opened in Union County, Arkansas, with showings in wildcat tests in West Texas, New Mexico, and Texas Gulf.

Daily Average Production for Week

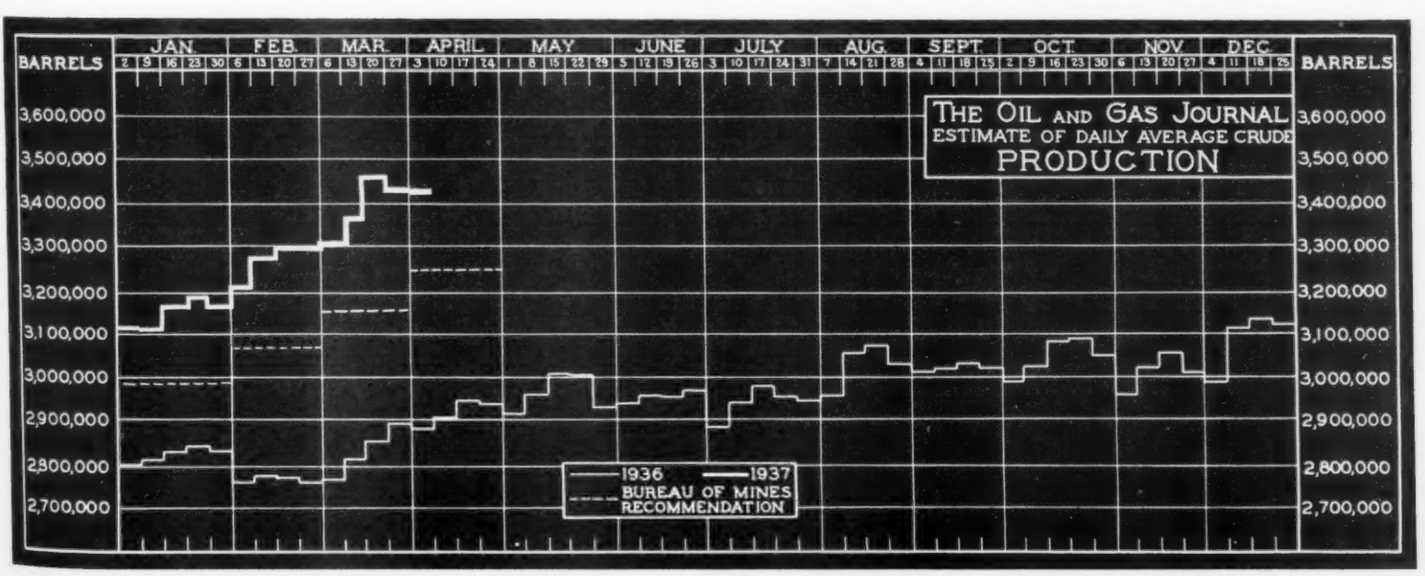
	Apr. 3, 1937	Bur. Mines Apr. est.	Apr. state allowable	Mar. 27, 1937
Oklahoma City	164,400	.....	.....	150,800
Seminole-St. Louis	89,000	.....	.....	89,625
Remainder of State	395,325	.....	.....	400,200
Total Oklahoma	648,725	609,600	620,460	640,625
East Texas	460,250	.....	.....	459,467
West Texas	208,297	.....	.....	208,095
North Central Texas	101,449	.....	.....	101,447
Texas Panhandle	75,248	.....	.....	81,750
East Central Texas	123,450	.....	.....	124,042
Gulf Coast Texas	332,045	.....	.....	334,538
Southwest Texas	101,050	.....	.....	108,189
Total Texas	1,401,789	1,297,900	1,348,964	1,417,528
North Louisiana	71,645	.....	.....	70,315
Gulf Coast Louisiana	174,400	.....	.....	175,850
Total Louisiana	246,045	244,800	235,675	246,165
Santa Fe Springs	44,500	.....	.....	44,650
Long Beach	60,750	.....	.....	61,500
Kettleman Hills	75,500	.....	.....	78,500
Remainder of State	404,500	.....	.....	404,600
Total California	585,250	579,900	*603,000	589,250
Kansas	189,175	183,000	190,300	186,650
Arkansas	27,440	27,400	.....	27,700
Eastern Fields	115,100	115,000	.....	114,000
Michigan	40,112	30,600	.....	39,267
Southeastern New Mexico	103,580	90,440	102,155	102,170
Rocky Mountain area	71,230	64,360	.....	71,520
Total United States	3,428,446	3,243,000	.....	3,434,875

*Recommendation of Central Committee of California Oil Producers.

Crude Oil Stocks in United States

(BUREAU OF MINES ESTIMATES)

Week ending March 27, 1937	293,587,000
Week ending March 20, 1937	291,555,000
Week ending March 29, 1936	312,950,000



SPARKS FROM THE NEWS

When oil companies gave up retail station operations they passed on to independent dealers labor responsibilities representing about 35 per cent of the total employment in the oil industry. Since most dealers employ little or no outside help, retail distribution is no longer a fertile field for union organizers.

Five years of depression inactivity in new tanker construction has resulted in a world-wide scarcity of water transportation facilities for petroleum. The higher tanker rates now prevailing should furnish the incentive for additional construction. However the fact that shipbuilders have orders from countries enlarging their navies in preparation for war does not point to rapid expansion in tanker capacity.

A Yates pool well in Texas produces at the rate of 100,000 barrels, which is a lot of oil, especially when it is found only 1,300 feet from the surface.

Twenty leading oil companies which have made final reports show 1936 total net incomes of $173,597,485, a gain of 53 per cent over 1935. Most of these companies are believed to have had earnings for the quarter just closed in excess of the same period last year.

Summer vacations provided for in more and more labor agreements should cause oil marketing companies to be interested in the possibilities of increased tourist business. Early tourist bureau inquiries indicate that due to many vacations to be granted, travel will start earlier this year. The same inquiries show that tourists expect to go farther and stay longer.

The new Buckeye field in Gladwin County, Michigan, with the exception of East Texas, leads the country in drilling wells with 63. They are trying to get under the wire before the inevitable proration due to lack of pipe line outlets becomes effective.

A group of smaller refiners operating with low-gravity Talco, Texas, oil present a novel if not convincing argument for larger crude supplies. They say increased allowables in the field will enable them to produce more asphalt, to pave more highways and thus furnish more outlets for gasoline-bearing crudes.

With more tires manufactured than ever before, dry cleaners returning to boom prosperity and the paint industry getting back on its feet, refiners of special naphthas are able to see something ahead besides cut prices.

Hockley County is added to the important list of oil-producing areas in Texas, a wildcat test showing commercial production.

The oil executive's feeling of satisfaction in regard to reductions in operating costs made possible by good engineering practice lasts until he gets word from the tax department of a new levy which more than offsets the saving.

A new field near El Dorado in Union County and the probability that Rodessa field will be extended into that state is once more making Arkansas oil conscious.

An oil man who was compelled to pass three trucks, a bus and two trailers, all within one mile, says he tried to remember that they rate as one of the oil industry's largest customers.

Reports available the first of the week show that the large production of 3,434,875 barrels daily for the week ending March 27 was not consumed currently. Of this national total 285,000 barrels daily went to crude storage and about the same amount was added to the already high inventories in the form of gasoline.

The large quantity of natural gasoline which has been sold for delivery over the year and the indications of improved spot demand may mean that manufacturers will avoid the usual late spring and early summer slump in prices.

To take care of a larger demand later in the year one of the major natural gas pipe line systems is enlarging its trunk line system with numerous loops and additional compressor capacity.

GONE WITH THE WIND

—International.

Fire consumes 48,000 gallons of gasoline in tankcars aboard a barge near Philadelphia, Pa.

World Shortage of Tankers Seen in Current Rates

By H. STANLEY NORMAN

NEW YORK, Apr. 6.—Contrary to previous experience in the world tanker market, charter rates held firm entering the second quarter. Normally, rates start sagging early in March after the rush fuel oil cargoes have been discharged or loaded. But this year marine departments of worldwide distributing companies and individual dealers are questioning whether sufficient tonnage exists to supply rapidly expanding demand. There seems little doubt oil tanker construction has lagged, particularly abroad.

Existing tanker rates are the highest since 1929 and have appreciated 100 to 150 per cent since start of the winter fuel oil consuming season. For seven years, the rates have either held at reasonably low levels throughout the year or returned to lower figures after moving the bulk of fuel oil requirements. Conditions this year are running contrary and shippers concede construction did not keep pace with increasing demand during the last half of 1935, all of 1936 and the first quarter of 1937.

While about 30 new tankers were delivered by domestic and foreign ship builders in 1936, some merely replaced obsolete equipment. Others in need of repair or replacements were temporarily withdrawn from service and probably will not be available for at least a year. The registered tonnage of all tankers having more than 1,000 gross tons capacity is now 9,195,421 gross tons. Lloyd's Register for 1936-37 shows a total of 1,475 tankers, classified as 893 steam and 582 motorship, having 1,000 gross tons and upwards, and an increase in gross tonnage of 299,984 tons over 1935-36.

There are no tankers now waiting for fixtures and there have been no idle boats for several weeks. Private tanker owners in many instances are booked for several weeks and in many instances are enabled to move pay loads in two directions. Interchange of tanker facilities between marine departments of major companies to avoid lengthy delays and to take maximum advantage of revenue producing operations has reached the ultimate.

Shortage of fixtures and high rates for foreign registered boats was subject for private investigation abroad. Dealers abroad at first thought the shortage of boats and high rates might be due to deliberate efforts of tanker owners. The investigation, however, produced negative results and the inquiries indicated the shortage was simply the result of demand running ahead of supply.

Twenty-three tankers are currently under construction in American shipyards. Eight new tankers with 96,600 tons are scheduled to be delivered in 1937. Thirteen boats with 175,000 deadweight tons are scheduled for delivery in 1938 and the remaining two in 1939. Despite present conditions, boat owners and fleet operators are not convinced a reaction may not set in before June and rates may decline to nearer normal levels for summer charters.

The United States alone has a total of 388 tankers of more than 1,000 gross tons listed in Lloyd's Register. The boats, 326 steamers and 62 motorships, have 2,489,725 gross tons, or more than any other nation. Great Britain and Ireland, however, are a close second with a total of 372 boats having 2,314,052 gross tons. Norway is third with a total of 229 tankers having 1,657,782 gross tons. Other nations with less than 500,000 gross tons rank as follows: Holland, Italy, Panama, France, Japan, Germany, Canada, Sweden, U.S.S.R., Denmark, Spain, Belgium, Danzig and other British Dominion countries. Three nations control more than 65 per cent of the total tanker fleet and have nearly 70 per cent of the gross tonnage.

In searching for an explanation of present conditions, marine fleet operators attribute the high rates and scarcity of boats to three main factors. Consumption increases abroad are at approximately the same rate as in the United States. Foreign shipyards are devoting most of their time to building navy fighting craft and steel manufacturers and fabricators abroad are turning their production into rearmament equipment. Shifting in world petroleum trade is compelling longer, time-consuming voyages to supply markets formerly served from nearer production sources.

Still another factor, probably incidental, is that American and Dutch West Indies refineries were among the first equipped to produce current qual-

(Continued on Page 26)

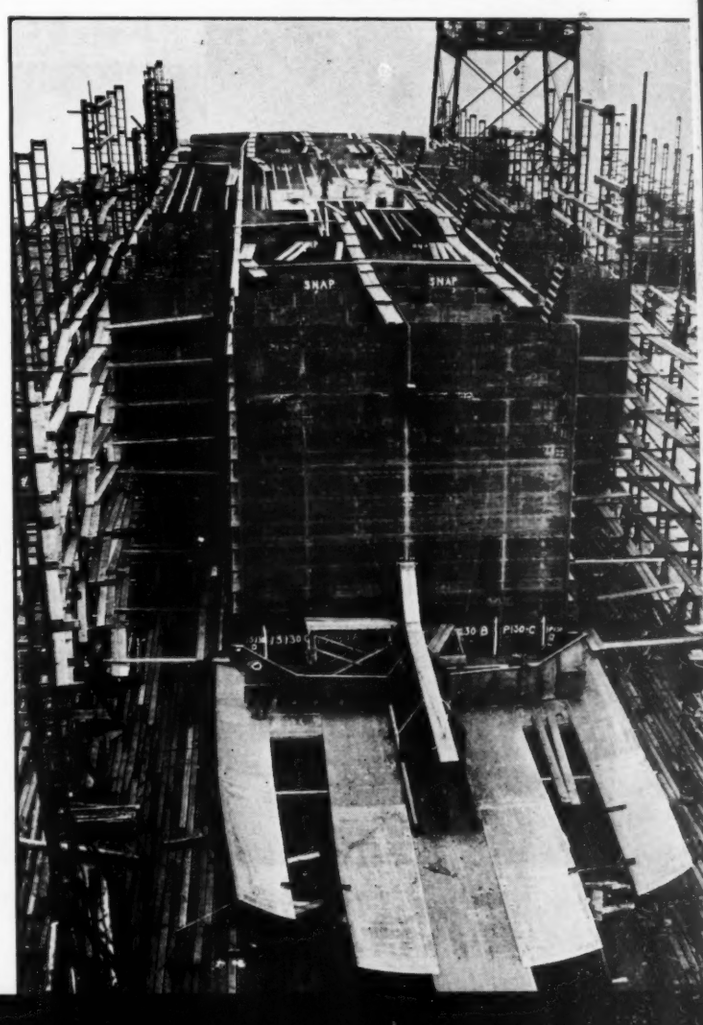
Tanker Rates

At this time the rate on clean tankers from the Gulf to points in the New York harbor area is approximately 35 cents per barrel compared to 23 cents a year ago. For dirty tankers the rate is 45 cents per barrel, an increase of about 17 cents. In 1929 clean tonnage chartered for 32 cents per barrel, and dirty boats for fuel oil movement were available at approximately 41 cents per barrel in March, 1929.

Current rates from the Gulf to the United Kingdom and European points are 32 shillings per ton (approximately 88 cents per barrel) for clean boats and 35 shillings per ton (about $1.10 per barrel) for dirty vessels. These rates compare with 39 cents for clean and 42 cents for dirty tonnage early in 1936. During 1929 the year's average in this charter market was 60 cents per barrel for clean and 64 cents for dirty tonnage.

The increases have been similar in petroleum shipments from California to the Orient. The present rate from California to Japan is 31 shillings, 6 pence (86 cents per barrel) for clean boats and 30 shillings (98 cents per barrel) for fuel oil tonnage. In March, 1936, the rates were approximately 45 cents for clean and dirty tankers. Rates on shipments from California through the Panama Canal to East Coast points have increased in line with other rates. Normally they are about 2.3 times the Gulf-Atlantic seaboard rates.

Tanker under construction



Economic and Technical Topics Occupy Dallas A.P.I. Meeting

By L. E. BREDBERG

DALLAS, Tex.—Timely and practical talks on technical and economic topics affecting the oil industry held the attention of more than 400 representatives of companies and individual operators at the spring meeting of the Southwest District of the American Petroleum Institute Division of Production in Dallas last week.

During the two-day session seven technical papers were presented ranging from blowout prevention to the flow of mixtures of oil and water through sand. These papers were all carefully prepared, and while they dealt with problems common to the Southwest and Gulf Coast there is much in many of them of interest to operators and engineers in other fields. Several are published in this issue of The Oil and Gas Journal.

Following the first day's technical meeting the Dallas oil fraternity gave a stag party in the Petroleum Club's room atop the Baker Hotel, honoring W. R. Boyd, Jr., George A. Hill, Jr., and Wallace E. Pratt.

Wallace E. Pratt, vice president, Humble Oil & Refining Co., spoke on "Trends and Potentialities in Oil Development in the Southwest." W. R. Boyd, Jr., executive vice president, American Petroleum Institute, presented "A Picture of Petroleum Progress." Jake L. Hamon, president, Texas division, Mid-Continent Oil and Gas Association, described "Taxation—An Overriding Royalty," and George A. Hill, Jr., president, Houston Oil Co., discussed the relation of employer and employed in the oil industry. Conspicuous passages in these addresses follow:

J. B. Stoddard, Charles F. Roeser, E. L. Smith

Jos. Bridwell

A. W. Thompson

Paul Pitzer, Sidney Latham

Wallace E. Pratt

But more pregnant with significance for the future of the oil-producing industry in the Southwest than comparisons of past production and proven reserves is the trend which may be read from the record of discoveries of oil fields in recent years. In this country, our proven reserves have always been subordinate in importance to the new reserves made available from time to time through discovery. This has been true particularly of the Southwest where reserves were comparatively small until an accelerating rate of discovery over the last 10 years brought them to their present imposing proportions. Of the roughly 15,000,000,000 bbls. of oil discovered in new oil fields in the United States in the last 10 years, 60 per cent was found in the Southwest. During the preceding decade, with total discoveries aggregating less than 10,000,000,000 bbls., the Southwest accounted for only 38 per cent of the total, or 3,600,000,000 bbls.

But of all trends which the enterprise of producing oil has manifested in the last 10 years, the most important has been the development of new and improved finding technique. In this development of improved finding technique the Southwest has pioneered. Just as the rotary drill was developed in the Southwest at the end of the last century and its use extended later into other regions, so geophysical methods of exploration for oil were first developed and reduced to successful practice in the Southwest more than 10 years ago, to be adopted later by oil producers in other parts of the country. More than half of all the oil discovered in the United States in the last five years was found as a result of surveys by geophysical methods, originally developed in the Southwest.

W. R. Boyd, Jr.

I think we can safely say that even the best and most accurate modern estimates of petroleum reserves are merely calculations of an extremely limited portion of total petroleum resources. Virtually every estimate so far made has been revised upward in the light of later knowledge.

The ability of petroleum field engineers successfully to maintain the flow of oil from well to market is augmented by the demonstrated abilities of petroleum chemists and physicists to promote progress in the science of petroleum refining.

Other research workers are fitting many important pieces into our picture. Some of them give us a glimpse of a gigantic petroleum chemical industry, with oil becoming as prolific a source of useful products as coal tar has been. In the field of petroleum research, discoveries crowd upon discoveries. Already we have reached the point where the scientist is planning first to design the hydrocarbons he desires for the uses to which they are to be put, and then seeks to find the way to obtain them from petroleum. Truly this industry and the raw materials which it produces know virtually no limitation.

We cannot overlook the pieces fitted into our picture of progress by those who work to develop more effective and more efficient uses of petroleum products. They seek to reduce not only the quantity of oil which must be produced and refined, but the quantity of refined products needed to do the world's work. Already, it is estimated, the use of petroleum products has increased man's capacity for useful work 36 times.

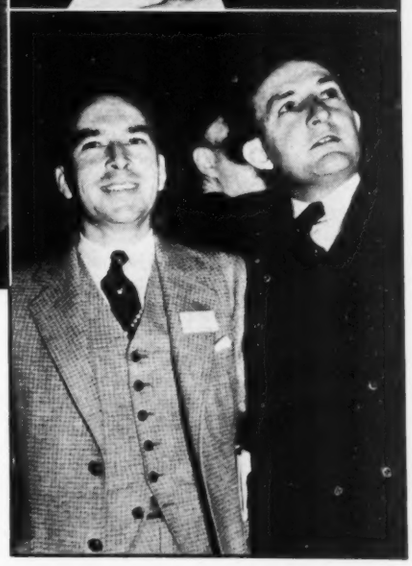
But while we labor diligently to piece together our picture, we are

forced to admit that certain trends and influences work against ultimate success. We must so classify the present tendency, through the medium of excessive and punitive taxation, to divert money to nonproductive uses. Well we may wonder when this absorption of earnings will cease and will permit money again to flow freely in the channels of trade.

It should be exceedingly helpful were you pridefully to reveal the success achieved by your industry in solving cooperatively its many technical and practical problems, the beneficial results of which have been passed on to the general public in lower prices. It would be helpful also if you would tell this story particularly to those legislators who, in many instances, I fear, have overlooked the picture of petroleum progress and who believe they see only a need for governmental intervention and interference to an alarming and unnecessary degree. Certainly they should be sympathetic listeners when you discuss the adverse effects of petroleum taxation.

John Ritter, C. B. Claypool, Dr. F. H. Lahee

Dr. V. C. Illing, Royal School of Mines, London



Harold Byrd, E. B. Hopkins, W. J. Morris W. A. Alexander, B. C. Clardy

Jake L. Hamon

Figures collected and analyzed by the Texas Mid-Continent Oil and Gas Association show that Texas oil producers are now paying $5.39 in taxes for every dollar of tax paid in 1922. This means that our tax bill exclusive of federal levies has increased 439 per cent since 1922. Has there been a corresponding increase in the value of Texas oil production? To the contrary, the facts prove that the market value of Texas oil has only shown an increase of 147 per cent since 1922. One item alone, the state gross production tax on crude oil, is at present costing our industry $14,200,000 a year. This item has shown an increase of 81.3 per cent within the last two years!

Taxes now levied against oil producers of Texas virtually constitute the payment of an overriding royalty of one-eighth over and above the usual fee royalty paid to the landowner. I am sure all of you agree that few oil operators today are willing to invest money in new properties that involve the payment of an override above the customary royalty. Yet, that's exactly what the oil producer's tax load is—an overriding royalty which must be paid out of your seven-eighths interest in the oil produced. The only difference in this case, however, is that the amount you pay in taxes is not fixed at a definite percentage like an overriding royalty, but may be increased at will whenever an additional levy is made by our taxing authorities.

A vital point to be considered by those who seek increased tax revenue from the Texas oil industry is whether or not the normal course of development without increasing levies will produce more actual revenue. On the basis of present and prospective development of the state's oil resources, spurred forward under the impetus of a constantly greater demand for oil, it is not difficult to see that the state and its local subdivisions will automatically obtain a constantly larger revenue from oil, without any increase in tax rates. Facts recently compiled by our association show that the natural course of development through 1940, without any increase in tax rates, will increase the state's share of oil tax revenue from $16,100,000 in 1936 to $28,700,000 by 1940. This is a conservative estimate; I believe the appreciation in tax returns will be even greater.

George A. Hill, Jr.

The record of the industry, with respect to hours, wages, working conditions, insurance benefits and various other humanitarian activities, would indicate an acute sensitiveness to and regard to the welfare of the employed by the employer. If it should be contended that this has not been manifested to its ultimate degree, it nevertheless furnishes indisputable proof that there exists upon the part of the employer, generally, the ability and willingness to improve the various phases of the relationship between the employer and the employed in our industry, and this has been true through a long and continuing process of improved relations.

It is likewise and equally true that the employed, in our industry, have, through increasing skill, energy and fidelity, rendered an increasingly effective service and have been important and responsible partners in the erection of our great industrial structure. They have exhibited a degree of considerateness and understanding that has proven indisputably their recognition of the mutuality of the interest of the employer and the employed.

Is it likely, then, that, out of the unrest that is in the air affecting other industries, an issue may be suddenly precipitated in the oil industry that will supplant distrust for understanding, arbitrariness for human sympathy and interest, and a public-be-damned attitude for the present zealous devotion to public service?

At the opening technical session Thursday morning, Carl E. Reistle, Jr., Humble Oil & Refining Co., Houston, Tex., presided, and Charles B. Carpenter, geologist and petroleum engineer of the U. S. Bureau of Mines at Dallas, gave

New Officers A.P.I. Southwestern District, Division of Production

C. G. Staley, A. G. Levy, George B. Corliss, W. S. Morris, Carl Hickman

H. J. Hawley, J. H. Dunn, F. L. Chase, E. L. Smith, Tom Nees, C. J. Davidson

the first paper, "Some Causes of Blowouts While Drilling, and Means of Prevention." A number of lantern slides showing some of the worst blowouts recently in Texas were shown. J. E. Warren, Carl B. King Drilling Co., Dallas, and T. K. Knox, Republic Natural Gas Co., led the discussions, many questions being asked by others who joined in the discussions.

The second paper was by Madden T. Works, Cameron Iron Works, Inc., Houston, on "The Development of Mechanical Control Equipment Used to Prevent Blowouts," was discussed by M. L. Cashion, Gulf Oil Corp.; W. A. Alexander, Shell Petroleum Corp., and C. E. Sutton, Pure Oil Co.

The second day's morning session was presided over by Mr. Sutton. A paper on "Foundations for Marsh Operations" dealt with types of structures used as foundations for drilling rigs and derricks in the marshlands found along the Gulf Coast in Texas and Louisiana, various opinions being held as to the value of the different kinds. H. E. Anderson, Texas Creosoting Co., presented this paper, which he prepared jointly with W. F. Herbert, Texas Co. This paper will be found elsewhere in this issue of The Oil and Gas Journal. F. W. Oberg, Humble Oil & Refining Co.; F. B. Willig, Shell Petroleum Corp.; W. H. Meier, Atlantic Refining Co.; D. T. Ross, Dewey T. Ross, Inc., and C. E. Sutton, Pure Oil Co., took part in the discussion, some of them giving shorter papers on this subject, an important one to companies and independents drilling in the Gulf Coast territory. W. H. Stacey, American Wood Preservation Association, also contributed a paper prepared on wood preservation in marsh operations.

George B. Kitchel, Humble Oil & Refining Co., Houston, read "A Discussion of Oil Field Steam Generating Plants," which T. C. Ervin, Lucey Boiler & Manufacturing Co., and C. E. Bronson, Kewanee Boiler Corp., discussed. Mr. Kitchel's paper also is published in this issue.

At the afternoon session, a talking picture on "California Giants" was presented by the California Redwood Association.

A. G. Levy, Texas Co., Shreveport, La., presided at this session. A paper on "Bottom-Hole Well Completion Methods in the Gulf Coast," written by I. W. Alcorn, Pure Oil Co., collaborating with J. U. Teague, Humble Oil & Refining Co., was discussed by J. K. Butler, Texas Co., and C. S. Bedford, Stanolind Oil & Gas Co.

S. B. Sargent, Jr., Sargent Engineering Corp., presented a paper on "Capacity Pumping of Oil Wells," discussed by J. F. Kendrick, Sullivan Machinery Co., and E. P. Hayes, Texas Co.

W. V. Vietti, Texas Co., Houston, and Harold Vance, of the petroleum engineering school of Texas A. & M. College at Bryan, led discussion of a paper on "Flow of Mixtures of Oil and Water Through Sand," prepared by F. B. Plummer, J. C. Hunter, Jr., and E. H. Timmerman, all of the University of Texas, Austin. This paper is in the Engineering Section of this issue of the Journal.

Officers elected for the ensuing year are: A. G. Levy, Texas Co., Shreveport, La., chairman; George B. Corliss, Humble Oil & Refining Co., Houston, Tex., vice chairman for South Texas; W. S. Morris, East Texas Engineering Association, Kilgore, Tex., vice chairman for East Texas; H. H. Hardison, Standard Oil Co. of Texas, Midland, Tex., vice chairman for West Texas; C. G. Staley, Lee County proration office, Hobbs, N. Mex., vice chairman for New Mexico; W. C. O'Ferrall, Lion Oil & Refining Co., El Dorado, Ark., vice chairman for Arkansas; W. A. Alexander, Shell Petroleum Corp., Iowa, La., vice chairman for Louisiana; and Carl Hickman, Dewey T. Ross, Inc., Houston, Tex., secretary-treasurer.

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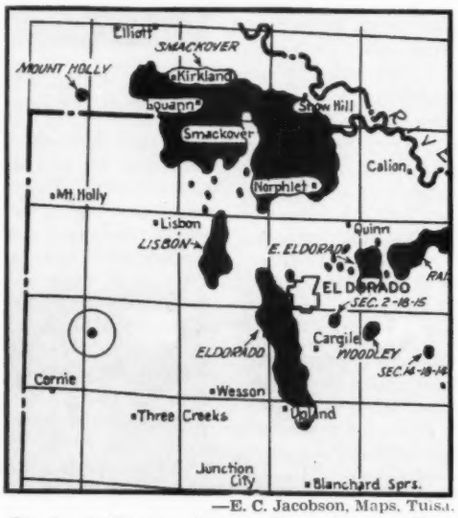
*Exofficio member as district section chairman.

New Pool in Arkansas



—E. C. Jacobson, Maps, Tulsa.

Circle indicates latest discovery well in Union County, Arkansas

EL DORADO, Ark., Apr. 6.—Lion Oil Refining Co. has opened another pool in Union County, about 13 miles west and then 3 miles south of El Dorado. The discovery well, No. 1 Morgan, section 18-18-17, on the Shuler structure, observers estimate all the way from 1,000 bbls. upward.

This morning the well flowed 60 bbls. an hour through a three-quarters inch choke, and later 20 bbls. an hour through 19/100-inch choke, with tubing pressure 1,400 pounds and casing pressure 1,900 pounds, and with gas at the rate of 3,000,000 feet per day. The oil is 37 gravity and is coming from the lower sand member of the Travis Peak (Lower Cretaceous) at a total depth of 5,559 feet. The company is laying a 4-inch line from its refinery in this city to the well.

Phillips Petroleum Co. "shot" and blocked the Shuler structure last summer, and drilled No. 1 Morgan to 4,270 feet and temporarily abandoned it. The Phillips company checkerboarded the 4,700-acre block and divided it equally with the Lion company in return for a deep test of the Morgan well. Each owns a half interest in the well.

Labor Executive Council Plans Details of Oil Unionization

By GEORGE WEBER

HOUSTON, Tex., Apr. 5. — The executive council of the International Association of Oil Field, Gas Well and Refinery Workers in their initial meeting here today discussed the details of their widely heralded plans to unionize the oil industry. The council meetings will be continued through the week and officers of the association will make their initial overtures for union recognition with local refining companies which do not at this time have contracts with the organization.

The meeting was preceded with an exchange of telegrams between Governor James V. Allred of Texas and Harvey C. Fremming, president of the association. Governor Allred in a statement from Austin made it clear that he would not tolerate sit-down strikes, declaring them to be "un-American." Mr. Fremming in a wire said they did not use this method of obtaining recognition for their union. He said later that he could not guarantee that sit-down strikes would not occur, but if they did they would not be incited by his organization. The governor then asked for the names and home addresses of all union organizers who would operate in the state in connection with the organization's program to expand its membership. Union officials said the information would be furnished the governor.

Condemnation of C.I.O.'s activities in the state came in the form of resolution at the American Federation of Labor meeting at San Antonio on Monday. The resolution also commended Governor Allred's stand.

In a booklet released Monday at Washington and here the program of the Committee for Industrial Organization (C.I.O.) for unionizing the petroleum industry is explained. The organization unit for the C.I.O. in the drive to extend the scope of its activities in the oil industry is the Petroleum Workers Organizing Committee (P.W.O.C.). Members of this committee are Phillip Murray, vice president, United Mine Workers; Charles P. Howard, president, International Typographical Union, and H. C. Fremming, president of the International Association of Oil Field, Gas Well and Refinery Workers of America.

The association of which Fremming is head will be the unit around which the actual organization efforts will center. This association has a membership of approximately 75,000 at this time with representation in all branches of the industry. It has contracts with a number of oil companies providing for what in some cases amounts to the closed shop. The bulk of the membership so far has been in the refining branch of the industry.

For organization purposes the United States has been divided into seven districts. The division by states follows: District No. 1, Arizona, California, Nevada, Oregon and Washington; District No. 2, Colorado, Idaho, Montana, Nebraska, North Dakota, South Dakota, Utah and Wyoming; Districts 3 and 4, Arkansas, Louisiana, Mississippi, New Mexico and Texas; District 5, Kansas, Missouri and Oklahoma; District No. 6, Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, Wisconsin; District No. 7, Alabama, Connecticut, Delaware, Florida, Georgia, Kentucky, Maine, Maryland, District of Columbia and Massachusetts.

Based on survey made in 1935 the association estimates there were 509,880 oil industry employes divided as follows:

District—	Producing*	Refining†	Marketing— Wholesale	Marketing— Retail
No. 1	13,500	8,880	13,090	23,060
No. 2	2,100	2,600	7,260	11,380
Nos. 3 and 4	31,800	25,390	12,640	19,480
No. 5	29,600	9,880	8,880	16,500
No. 6	6,800	14,170	25,750	55,720
No. 7	18,400	25,840	46,740	80,460
Total	102,200	86,760	114,360	206,560

*Wage earners only, excludes contract drilling. †Includes wage earners and salaried employes.

Regarding the aim of the union the announcement states: "Its aim is to assist the millions of unorganized in the mass production industries in obtaining the benefits of unionism. It believes that the industrial form of organization is needed in such cases so that all types of workers in an industry may act solidly together"

The announcement quotes from the minority report of resolutions committee, A.F. of L. convention last year, which stated: "In the great mass production industries and those in which the workers are composite mechanics, specializing in and engaged upon classes of work which do not qualify them for craft membership, industrial organization is the only solution."

The announcement concludes with the following recital of benefits of industrial organization: "The C.I.O. and the P.W.O.C. through their representatives will maintain and improve working conditions. They will enforce the right to collective bargaining; they will act as policing agency to protect the interests of the workers. Among other things they will establish the rights of seniority

DISCUSSING DRIVE—*Executive Council, International Association of Oil Field, Gas Well and Refinery Workers of America: P. G. Wilson, Houston, Tex.; W. A. Urban, Parco, Wyo.; W. W. Allen, Oklahoma City; E. C. Conarty, secretary-treasurer, and Harvey C. Fremming, president. Standing: R. B. Callaway, Ashland, Ky.; O. A. Knight, Hammond, Ind.; and J. C. Coulter, vice president, Long Beach, Calif.*

for a job holder; they will establish the right of a job holder on the basis of efficiency. Hours of employment and hourly and monthly rates will be adjusted in line with the trend of economic conditions and to afford a decent standard of living for all workers.

"The workers will also receive the benefits of educational programs, vocational training, and instruction in general economic and civic affairs. Not only the workers but our nation in its entirety will be the beneficiaries of this great movement.

"Labor demands collective bargaining and greater participation by the individual worker, whether by hand or brain, in the bountiful resources of the nation and fruits of the genius of its inventors and technicians.

"The organization drive, whose machinery the board will perfect and coordinate, is already shaping itself. The campaign, under the banner of the single industrial union for everyone in the plan, saves energy, speakers, and money. The appeal is simple and convincing. Hundreds and thousands of workers united in one organization are needed to make the workers awaken to their power and lose their paralyzed fears. Quick, powerful action can be taken by the whole group together for production and advancement."

TANKERS

(Continued from Page 21)

ity petroleum products. Further technical refining developments have been installed in those two countries as new processes were reduced to commercial importance. General business recovery in foreign consuming countries not only has increased petroleum consumers, but also the number of quality purchasers. Another factor not to be entirely overlooked is the rearmament programs in many foreign countries. In some cases, foreign powers are purchasing more petroleum and the surplus is going into military storage. In supplying stocks for military purposes, the oil industry probably is feeling some slight effect of artificial and inflated demand, but it is considered of only incidental importance. However, tankers now engaged in replenishing war stocks probably will be available to peacetime trade within a few months unless war occurs.

Another factor is the mortality rate in tankers. Operating at maximum speeds and capacities, accidents and inevitable mishaps increase proportionately. Recently, a large tanker and its cargo was rammed and sunk on the Pacific Coast. Only last week, the tanker Gulf Lass exploded and settled in the river at Norfolk leaving only her superstructure above water. While the equipment in both instances probably has a high salvage value and may require a minimum of repair work, they will be out of service for at least a year and may be replaced by almost complete new boats.

The U.S.S.R. is no longer a source of outside European petroleum, meaning that markets previously served by a comparatively short water trip are now dependent on more distant supplies. The longer trips are time consuming and represent as severe a strain on the world tanker fleet as an actual decline in the number of boats.

South American countries, including Venezuela, Colombia and Peru are now important sources of supply for European petroleum and are growing more important. The time required to move cargoes from the Dutch West Indies, where large proportions of the South American production is refined, to European markets is considerably more than under conditions existing five years ago.

The

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Honored by Safety Council

A. E. CROUSE *W. G. LUECK*

A. E. Crouse and W. J. Lueck, employes at Continental Oil Co.'s Basile, La., gasoline plant, will soon be honored by the National Safety Council for saving the life of a woman overcome by gas. Mr. Crouse started applying the Schaefer prone method of artificial respiration, sending for Mr. Lueck to assist. They worked for nearly an hour before the woman was revived. Mr. Crouse will receive the President's Medal of the National Safety Council, and Mr. Lueck will be given the Certificate for Valuable Assistance.

Crude Oil Stocks

Stocks of domestic and foreign crude petroleum at the close of the week ending March 20 totaled 291,555,000 bbls., according to the Bureau of Mines, an increase of 942,000 bbls.

(Barrels of 42 Gallons)

Grade of crude oil—	March 13	March 20
Pennsylvania Grade	4,031,000	3,976,000
Other Appalachian	858,000	841,000
Lime-N.E. Indiana-Michigan	872,000	887,000
Illinois-S.W. Indiana	9,679,000	9,513,000
N. Louisiana and Arkansas	9,992,000	9,856,000
West Texas and S.E. New Mexico	28,399,000	28,762,000
East Texas	22,174,000	22,191,000
Other Mid-Continent	115,900,000	116,265,000
Gulf Coast	24,778,000	25,061,000
Rocky Mountain	25,854,000	25,882,000
California	28,960,000	28,907,000
Foreign	1,566,000	1,764,000
Total reported weekly	273,063,000	273,905,000
Est. of unreported stocks	17,550,000	17,650,000
Total stocks	290,613,000	291,555,000

OBITUARIES

FRANK ROBINSON, 69, for many years tank gauging engineer for Ohio Oil Co. and Illinois Pipe Line Co. died recently in Findlay, Ohio, of a heart attack. He had been with Ohio Oil Co. since 1906, and throughout his career was with one of the Standard Oil group of companies. He was one of six brothers all of whom followed the profession of their father, the late James Robinson of Bradford, Pa.

THOMAS J. KELLY, 80, formerly secretary-treasurer of Paragon Oil Co., died at Toledo, Ohio, recently.

WILLIAM EDWARD HUNTER, 60, oil field worker, was killed at Petrolia, Ontario, when his bicycle was struck by a truck.

Panhandle Eastern to Loop Gas Pipe Line Across Three States

By W. T. ZIEGENHAIN

KANSAS CITY, Mo.—The second major step in a broad program of expanding its facilities is soon to be taken by Panhandle Eastern Pipe Line Co., which operates 859 miles of main line from the gas fields of the Texas Panhandle and southwestern Kansas to a point on the Illinois-Indiana border where it connects with the gas line of the Michigan Gas Transmission Corp., successor to Indiana Gas Transmission Corp. into Detroit.

The present program of construction includes looping the existing line at eight different points, making four river crossings, installing additional capacity at nine compressor stations, erecting a new 3,900-horsepower station at Tuscola, Ill., adding absorption and dehydration equipment in the company's natural gasoline plant at Liberal, Kans., drilling additional gas wells in the Hugoton field of Kansas, and extending the gathering system.

In the program of looping the existing system the company will lay 227 miles of 24-inch line and 24 miles of 22-inch. In every instance the line will be laid on the discharge side of the stations.

To account for these totals, approximately 40 miles of 24-inch line will be laid out of the Liberal, Kans., station, 34 miles will be laid out of the Greensburg, Kans., station, 41 miles out of Haven, Kans., station, 32 miles out of Olpe, Kans., 47 miles out of Louisburg, Kans., and 33 miles out of the station near Houstonia, Mo.

To account for the 42 miles of 22-inch pipe to be laid the program calls for 23 miles of additional line out of Centralia, Mo., station and 19 miles out of Pleasant Hill, Ill., station.

As an important part of the looping program the company will lay additional lines across four rivers. These crossings will be made using two 18-inch lines on the Arkansas, Neosho and Lamine rivers, and four 12-inch lines on the Missouri.

The pipe to be used in the program will have a wall thickness of nine-thirty-seconds of an inch, and in laying the pipe, two 40-foot joints will be welded together, later to be mechanically coupled together as 80-foot sections to form the line. The 24-inch pipe will weigh 71.24 pounds per foot and the 22-inch will weigh 65.23 pounds per foot. The pipe will be coated with hot enamel. Inspections will be made with electric "holiday" detectors.

Actual laying of the line will be handled by contract but at this time the work has not been let.

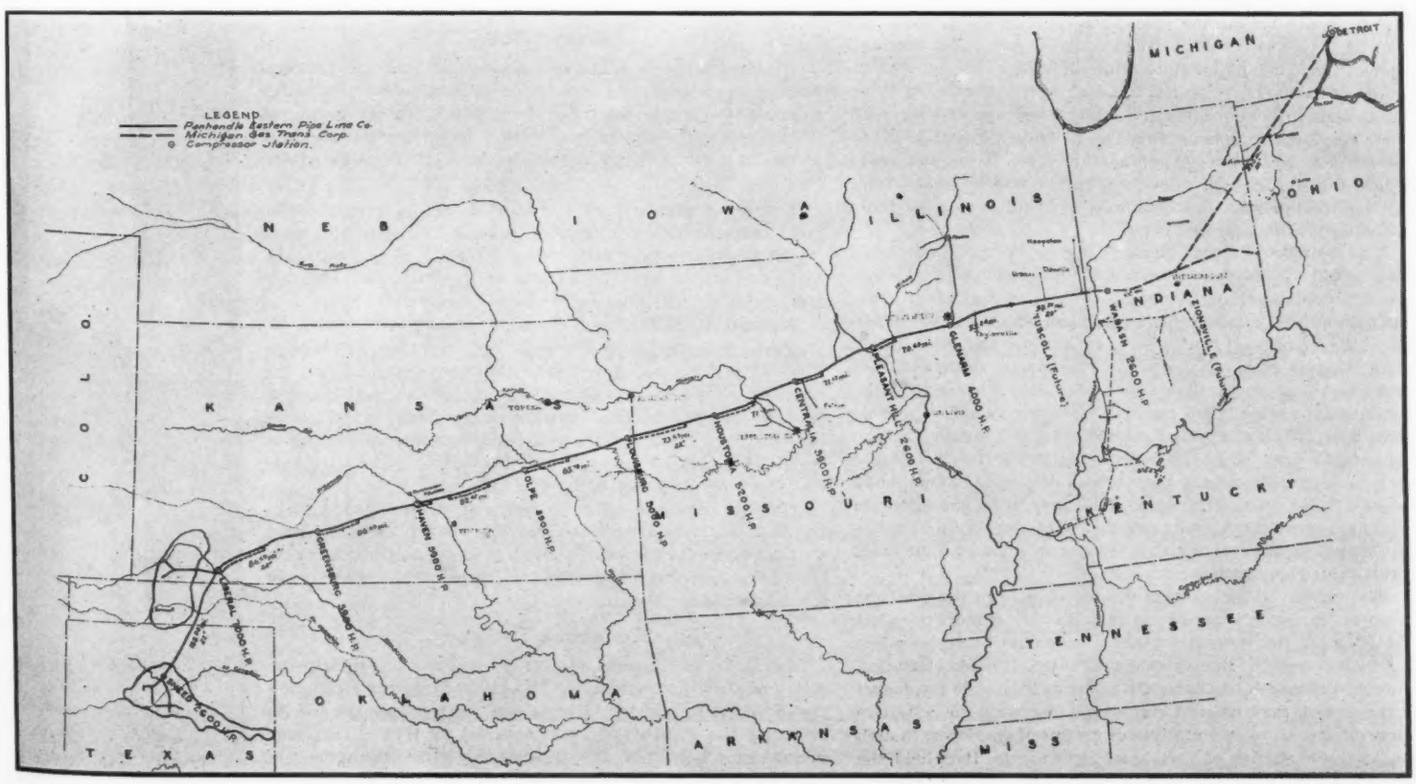
Orders for all the pipe have been secured by National Tube Co. and by A. O. Smith Co. Shipments of the pipe are expected to start from the mills by May 1.

To augment the gain in line capacity due to looping, the company will immediately begin installation of new Cooper-Bessemer and Worthington engines at nine existing compressor stations and in one new station mentioned previously.

At the Liberal, Kans., station three 1,000-horsepower engines will be added; at Greensburg, Kans., three 1,300-horsepower engines; at Haven, Kans., three 1,300-horsepower engines; at Olpe, three 1,300-horsepower engines; at Louisburg, Kans., two 1,000-horsepower engines; at Houstonia, Mo., one 1,300-horsepower engine; at Centralia, Mo., two 1,300-horsepower engines; at Pleasant Hill, Ill., three 1,300-horsepower engines; at Glenarm, Ill., one 1,000-horsepower engine and in the new station at Tuscola, Ill., three 1,300-horsepower engines will be housed. This construction work will raise the combined horsepower of the system from 43,300 at present to 72,700 horsepower when completed.

Special consideration should be given to the work planned for the Liberal, Kans., station where the company now operates a gasoline recovery unit and dehydration unit in conjunction with its gas transportation facilities. At present the gasoline absorption and calcium-chloride dehydrating equipment is capable of handling 135,000,000 feet of gas per day. Expansion will be made so that up to 200,000,000 feet of gas may be processed daily.

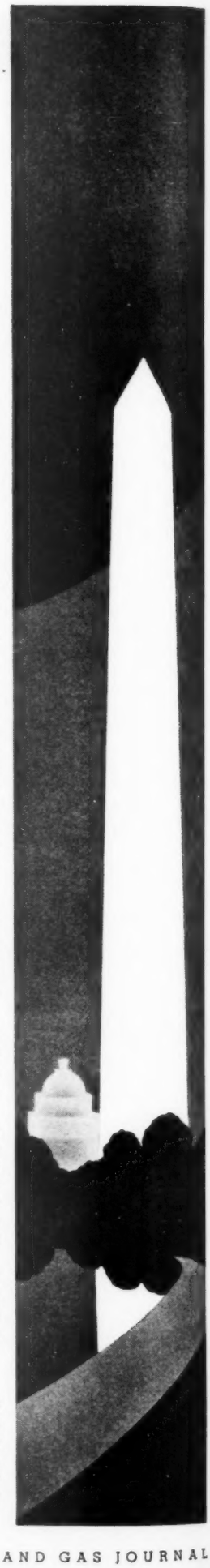
In addition to the construction work, which Panhandle Eastern has undertaken, Michigan Gas Transmission Corp. plans to build a new compressor station at Zionsville, Ill., and will enlarge an existing station at Montezuma, Ind.



Panhandle Eastern Pipeline Company system showing location of new loops

Legislation Affecting Oil at the National Capitol

By HENRY D. RALPH



WASHINGTON, D. C., Apr. 6.—Passage of the Connally "hot" oil bill by the senate without opposition indicates it will become law without difficulty, assuring extension of the act on June 16. The bill will be taken up by the house committee on interstate and foreign commerce probably the third week in April. A measure sponsored by Representative Martin Dies of Texas is pending there but the Connally bill will be substituted. The hearings, however, will probably bring a repetition of the objections at the senate hearing, particularly from jobber organizations. The oil workers' union also is expected to renew request for an amendment prohibiting interstate transportation of petroleum and its products not produced under minimum wage and maximum hour terms. Since such a provision would appear in direct conflict with Supreme Court decisions, particularly that outlawing the NRA, the house committee is not likely to give it serious consideration. The most that could be expected would be a federal law prohibiting interstate shipment of oil produced in violation of state laws regulating hours and wages, but that would be meaningless in absence of state wage and hour laws. Moreover, the administration is not particularly interested in a law of this sort for the petroleum industry alone and if there is any such move it will be of an all inclusive nature.

Supreme Court Decisions

Of the 17 decisions handed down by the Supreme Court on March 29, two are of importance to business because of their interpretations of the clauses in the constitution prohibiting state and federal governments from taking property without due process of law. The court unanimously upheld the collective bargaining provisions of the railway labor act and by 5 to 4 reversed a decision of 14 years' standing and upheld the Washington state minimum wage law for women. These decisions have cleared the way for state laws requiring employers to enter collective bargaining agreements with their employes, supplementing the Wagner national labor relations act, and also for more state laws fixing minimum wages for women and minors. Some 15 states already have such minimum wage laws, although not all are on all fours with the Washington law.

The opinion of Chief Justice Hughes in the Washington case would appear to lay ground for validation of both state and federal laws fixing minimum wages and maximum hours for men as well as for women and children, in certain conditions. He mentioned that where workers do not get a living wage the states are called upon to appropriate funds for their relief and low wages therefore cast a direct burden on the community, saying, "The community is not bound to provide what is, in effect, a subsidy for unconscionable employers. The community may direct its lawmaking power to correct the abuse which springs from their selfish disregard of the public interest." He also declared a state may take measures to eliminate sweatshops and exploitation of workers and to assist classes of workers not able to bargain for wages on equal terms with their employers.

The railway labor decision did not dispose of the question of applying the Wagner act to manufacturing industries but did set aside the contention that a collective bargaining law is a violation of the due process guarantee. It made clear that state governments, and congress so far as interstate commerce is concerned, may require employers to engage in collective bargaining with representatives of groups of employes, though not to the exclusion of individual agreements. It upheld the right of a government agency to conduct an election to determine the representative of a given group of employes for collective bargaining and held a majority of the votes cast is sufficient to designate a bargaining representative for all employes of the group eligible to vote in that election even though many employes did not vote and the winning candidate did not receive a majority of all eligible to vote.

These two decisions, together, go far in opening the way for further social legislation and regulation of business, particularly by state governments, for the due process of law clause has been used many times to stop various sorts of state regulatory laws. Both these decisions stressed that regulation which is reasonable and adopted in the interests of the community cannot be held to infringe due process of law.

State Sales Taxes

The state sales tax movement was given a powerful impetus in a decision upholding the Washington compensating tax law which imposes a tax upon use of commodities within the state but exempts from the tax commodities on which a retail sales tax has been paid either in Washington or another state. The practical effect is to apply the sales tax to goods purchased in other states through mail order or otherwise. The court held this is not a tax upon interstate commerce but upon the privilege of use after commerce is at end and since it operates to equalize intrastate and interstate sales it is not a burden upon the latter. It will doubtless be made use of by many states in enacting compensating taxes equal to their sales taxes, and it apparently eliminates any need for the Harrison-Palmer bill to give consent of congress to such taxes on mail order sales. This will affect the oil industry in states which have high sales taxes and where there is a volume of mail order buying of lubricating oils and other commodities.

Freight Rates

Testimony from petroleum shippers closed the hearings before the Interstate Commerce Commission on the heavy commodities section of the request of railroads for general increases in freight rates. Further hearings on sectional phases will be held by examiners in various parts of the country.

Shipper witnesses contended that as far as concerns shipment of petroleum products an increase in the freight rates would be detrimental to the best interests of the railroads, being met with a decrease in the quantity of petroleum hauled, a greater decrease than the increased charges could meet.

Edward D. Shiff, assistant traffic manager, Standard Oil Co. of New Jersey, who also appeared for Standard of Pennsylvania and Louisiana and Colonial Beacon Oil Co., said the railroads already have lost traffic in petroleum and its products to competitive transportation (largely barges and motor carriers) and predicted the proposed increase, amounting to about 1 cent per 100 pounds, will still further make an inroad into the business handled by the railroads.

"It will have the effect of not only diverting additional traffic from rails to trucks, but will make it more difficult for the carriers to recapture that large amount of traffic which they have lost, and which they might gain back were it not for this increase," he said.

Trademark Decision

The Court of Customs and Patent Appeals has upheld the ruling of the Commissioner of Patents denying the McKinnon Co. the right to register "High Press" as a trademark for lubricating oils. Registration was opposed by HYVIS Oils, Inc. The decision held that since lubricating oil is bought largely by word of mouth the two marks are so similar in sound confusion would result.

New Tests Begun, Many Leases Sold in Fast Langston Play

By DAL DALRYMPLE

When Eason Oil Co. and associates recently uncovered gusher production in the old Langston area of eastern Logan County, with Oklahoma's first major oil strike of 1937, they started a fast lease and royalty play and inaugurated an active drilling campaign in a sector that generally has been inactive since the flurry following the original discovery in 1934.

The new well, Eason Oil Co. and others No. 1 Smith, SW NW NW section 13-17-1w, came in as a gusher late in March. It was completed the past week with a productive rating of 10,165 bbls. of oil daily, through open casing. This was computed on a flow of 4,653 bbls. of oil in 23 hours and 15 minutes through 1-inch choke. Volume of gas ranged from 5,000,000 to 8,000,000 feet. Production is from Wilcox sand topped at 5,112 feet, with the hole bottomed at 5,128 feet. Stanolind Pipe Line Co. is taking the oil.

The gusher extended the Langston pool one-half mile eastward. It is north and west of Langston townsite. The Eason company owns one-half of the discovery tract, with Sinclair Prairie Oil Co. and Transwestern Oil Co. owning one-fourth each.

A stampede for leases ensued soon after the gusher pay was found. Within a few days considerable acreage changed hands and numerous deals were reported. The initial excitement has subsided somewhat, but a considerable play is continuing, with the Langston townsite and University grounds receiving attention from the lease men.

One of the latest deals was concluded the past week end with R. Olsen Oil Co. of Oklahoma City buying on the townsite. This firm purchased most of the leases in 13 blocks.

Major companies own most of the tracts around the well and townsite, with Sinclair Prairie and Transwestern companies the largest lease owners. Other major companies with close-in acreage include Stanolind Oil & Gas Co., Amerada Petroleum Co., Texas Co., Mid-Continent Petroleum Corp., Ohio Oil Co., Gulf Oil Corp., Sun Oil Co., Magnolia Petroleum Co., Shell Petroleum Corp. and Continental Oil Co.

Other buyers of leases on the townsite and of both close-in and outlying acreage include O. A. Walter; Houghton Royalties, Inc.; Ramsey Petroleum Co., Anderson-Prichard Oil Corp., L. F. Rooney, Eason Oil Co., James Rayhill, W. A. Delaney, Jr., W. R. Curry, Southwest Petroleum Co., Lacy Rollins and associates, J. R. Glover, Esta Hammers, O. H. Lachenmeyer, Frank A. Swanson, Charles M. Gooch, H. S. Elliott, J. A. Jenkins and associates, M. M. Mann, Gordon Witherspoon, J. C. Farmer, J. B. Milam, C. H. Doyle and others. Numerous farm-out deals were completed or are in the making, and several assignments of property have been recorded.

The Langston city council has issued drilling permits to Houghton Royalties, Inc., on four blocks of the original townsite. Applications of J. E. Crosbie, Inc., Harper-Turner, Charles C. Pepper and the Edgway Oil Co., for permits to drill on the townsite and College Heights addition were pending.

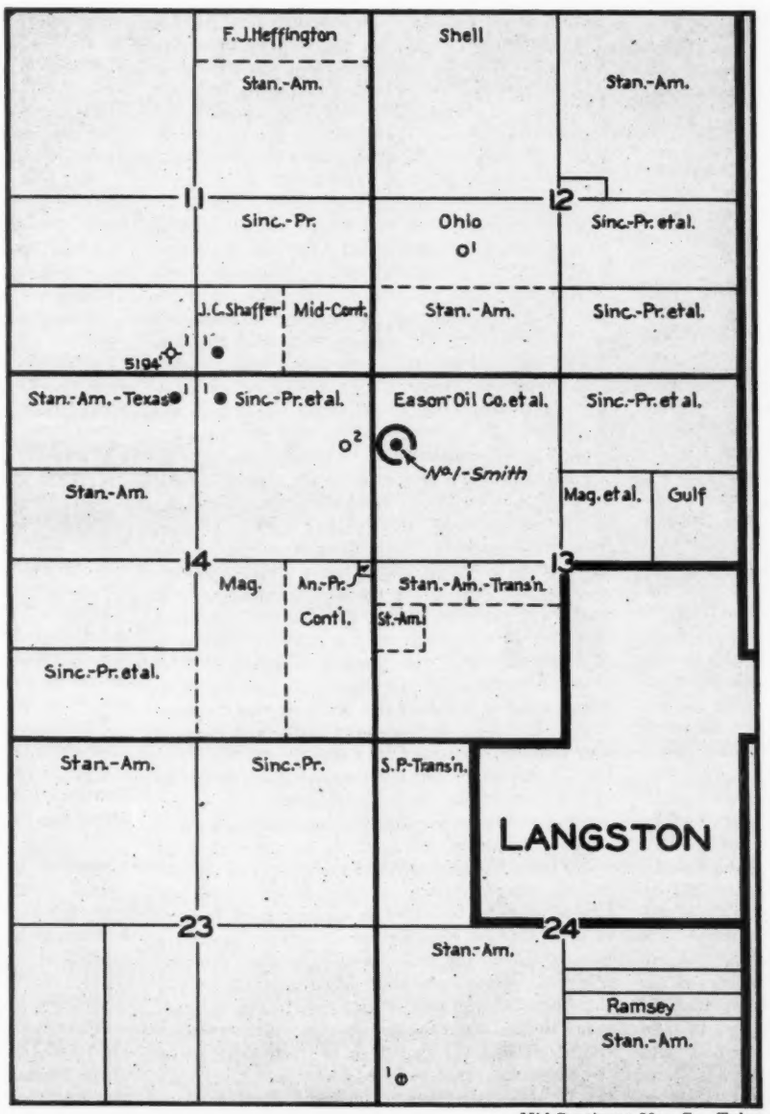
The Langston city council has adopted drilling regulations similar to those of Oklahoma City, except that they require a leaseholder to have 75 per cent of the acreage in a block instead of 51 per cent. The Langston lots average from two to five acres each, and the city ordinance permits one well to each block.

The lease play has extended to the south of the South Langston pool and around Meridian townsite, as the result of a new wildcat being started by Helmerich & Payne and others at No. 1 Randall, SW SW NW section 24-16-1w. Buyers in this sector include Carter Oil Co., Sinclair Prairie Oil Co., Sun Oil Co., Mid-Continent Petroleum Corp., F. M. Kightlinger, W. C. Kite and others.

Ten-acre well spacing has been proposed for the Langston field. A petition has been filed by Stanolind and Amerada companies asking that the area be given Class C rating for proration purposes. Hearing on the petition has been set by the Corporation Commission for April 9, when the commission also will consider the petition for 10-acre spacing. W. J. Armstrong, state conservation officer, filed the petition seeking a spacing order.

Work already has begun at several new tests and additional operations are expected to be started as rapidly as preliminary arrangements can be completed. Starting of work on the townsite will await approval of the Langston city council.

One of the first of the new tests was Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 2 Fouts, SE NE NE section 14-17-1w, west offset to the Eason gusher. Ohio Oil Co. was drilling ahead at No. 1 Knight, SE NE SW section 12-17-1w, northeast of the new producer. Southwest Petroleum Co. was starting at No. 1 Cemetery, NE NE SE section 14-17-1w, about 1 mile south of the gusher; and Mid-Continent Petroleum Corp. was starting at No. 2 Dobson, SE cor. section 11-17-1w, northwest of No. 1 Smith. Far to the south, Eason Oil Co. and associates had started work at No. 1 Sisters of the Blessed Sacrament, SW cor. section 24-17-1w.



—Mid-Continent Map Co., Tulsa.

Eason Oil Co. and others started a fast leasing and drilling campaign in the Langston area, Okla., when they found gusher production at No. 1 Smith, section 13-17-1w

Oklahoma Well Spacing Upheld as Texas Revises Its Order

The problem of well spacing was brought to the fore the past week in two important developments. Judge Prentiss Rowe, a district judge of Tulsa County, Oklahoma, on April 1 upheld the constitutionality of the Oklahoma spacing act in the first legal challenge of the new law which seeks to place well spacing in Oklahoma on a basis consistent with the best conservation and operating practices.

In Texas an order concerning well spacing was issued by the Railroad Commission of Texas, dated March 26. In effect it allows applicants for well spacing to reopen a hearing if a permit has been refused, provided they are able to show that "changed conditions" have occurred since the refusal to grant the well permit was issued.

Oklahoma Case

In the Oklahoma case Russell B. Patterson brought action against Stanolind Oil & Gas Co. and Amerada Petroleum Corp. for proceeds of a full half-interest in the royalty from a well located on his land.

Several oil states authorize their conservation agencies to require spacing of wells to prevent waste. In 1935 the Oklahoma legislature passed the most definite and comprehensive statute dealing with well spacing ever enacted. The underlying theory of the act was that in the case of new pools and pools not substantially developed a well spacing program for those pools, adapted to the peculiar producing conditions of the particular pool, would conserve the reservoir energy for producing purposes and thereby increase ultimate recovery. The Corporation Commission of Oklahoma was authorized, upon proper application, to establish drilling units for an oil pool subject to the act. Every effort was made to bring about strict equality among the lessees and royalty owners in the pool. Where a unit was held as an entirety, one well only could be drilled, and that had to be located in the approximate center of the unit. Provision was made for exceptions where a unit was on the edge of the structure and where it was being drained by a producing well on an adjoining unit. Upon a hearing in circumstances of this kind, the commission might permit the location of the permitted well at such place on the unit as would gain for the operator his probable share of the production under his land.

It was recognized that where units were established, cases would arise where ownership of the unit was divided; a lessee holding part of the acreage, another, or other, lessees holding the remainder; and the same division of interest might occur with respect to the royalty owners. Accordingly, the act was so drafted as fully to protect the equities of all parties. A uniform spacing program covering the entire pool had to be observed for conservation purposes so uniform pressure would be maintained throughout the pool, and to take care of those units, including several tracts held in separate ownership, whether by lessees, landowners who had not leased, or royalty owners, the following provisions were made:

A lessee owning part of the acreage of the unit could drill, but his production would be limited to that proportion of the unit's allowable that his acreage bore to the entire acreage of the unit. Provision was also made for lessees of separate tracts within a unit to combine for drilling of a community well, each to share the cost in the proportion of his acreage and to enjoy production in the same proportion. In the case of royalty owners, owning separate tracts in a unit, they were to receive a royalty from the well or wells drilled on the unit in the proportion which the acreage held by them bore to the entire acreage of the unit. In brief, the Oklahoma legislature here, while authorizing the Corporation Commission to establish spacing units, endeavored by every possible means to establish equality among all lessees and royalty owners interested in the field.

The Oklahoma Corporation Commission, in June, 1936, established 10-acre spacing units in the North Wellston pool. Russell B. Patterson was owner of an undivided one-half of the royalty in a 25-acre tract subjected to the spacing order. It so happened the drilling unit established in his case was divided in ownership, so far as the royalty was concerned. Mr. Patterson's undivided one-half interest in the royalty attached to 6¼ acres of the 10-acre unit and the royalty for the remaining portion of the unit was held by outside parties. Stanolind Oil & Gas Co. and Amerada Petroleum Corp. drilled a producing well in the center of the 10-acre tract, which placed it on the land on which Mr. Patterson held half the royalty interest.

Under the rule of capture prevailing in Oklahoma, which is subject to the police power of the state to prevent waste, Mr. Patterson, before adoption of this spacing act and the making of the spacing order by the Corporation Commission, would have been entitled to the full one-half of the royalty from the well located on the land where he and others owned the royalty interest. He demanded payment of royalty on that basis, which was refused by the lessees, who took the position it was their obligation to divide the royalty as provided in the statute. Accordingly, Mr. Patterson brought action against the Stanolind and the Amerada companies for the proceeds of a full half interest in the royalty from the well located on his land. The defendants pleaded the Oklahoma spacing law and the order of the Corporation Commission and tendered into court the royalty that Mr. Patterson was entitled to under the statute and the order; a little more than six-tenths of the royalty Mr. Patterson claimed.

The case was tried before Judge P. Rowe and decision rendered on April 1, and the plaintiff made the following contentions: (1) That the Oklahoma statute, which provided for published notice of hearings to establish spacing units, instead of providing for personal service on all parties to be affected by the order, lessees, royalty owners, as well, violated the due process clause of the state constitution and of the Fourteenth Amendment to the Federal Constitution; in brief, that the plaintiff never had been lawfully notified of the proceeding that reduced his royalty; (2) that the Oklahoma spacing act and the spacing order of the Corporation Commission amounted to an unlawful taking of the property of the royalty owner, because in virtue of his title he was entitled to the full one-half of all the royalty accruing from the well drilled on his property; and (3) that the standard for determining the size of spacing units by the Corporation Commission was not set forth in the spacing act, and that, accordingly, there was an unconstitutional delegation of legislative power to the Corporation Commission.

After extended argument, Judge Rowe upheld the constitutionality of the spacing act and of the spacing order of the Corporation Commission in all particulars. His decision in regard to the sufficiency of the notice and in relation to the delegation of legislative power was based purely on technical ground, but his decision on the major question that the rule of capture could be modified by a spacing act was based upon the fundamental consideration that it was designed to conserve the reservoir energy for the benefit of all of the lessees and royalty owners interested in the pool in order to obtain a larger ultimate recovery, in which benefit all would share. Otherwise stated, the statute was intended to protect the coequal rights of the royalty owners and lessees in an oil pool.

The case will be carried to the Supreme Court of Oklahoma and as that court must give precedence to appeals involving orders of the Corporation Commission, the attorneys advise that the court may pass upon the constitutionality of the spacing act as early as next summer.

Texas Order

Under date of March 26 the Railroad Commission of Texas issued an order and announced it considers and construes as constituting "changed conditions," in the commission's administration of Spacing Rule 37, among other things, the following:

"1. Any material changes in the physical conditions of the producing reservoir under the tract under consideration or under the area surrounding the said tract which would materially affect the recovery of oil from said tract.

"2. Any material changes in the distribution or allocation of allowable production in the area surrounding the tract under consideration which would materially affect or tend to affect the recovery of oil from the given tract.

"3. Any additional permits granted by the commission or wells drilled in the area surrounding or on offset tracts to the tract under consideration which would materially affect or tend to affect the recovery of oil from the given tract.

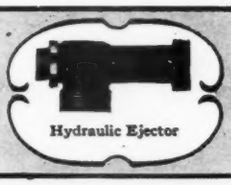
"4. Any additional facts or evidence thereof materially affecting or tending to affect the recovery of oil from applicant's tract, or the property rights of applicant, which were not known to and considered by the commission at any previous hearing or application thereon."

Magnetic Storm

Tucson, Ariz., observatory of the U. S. Coast and Geodetic Survey report a moderate magnetic storm started at 9 p.m. (C.S.T.) March 30 and ended at 7 p.m. (C.S.T.) March 31. Telegram follows:

"Moderate storm began thirtieth. Twenty one. Ended thirty-first. Nineteen. Central time."

PENBERTHY PRODUCTS


Hydraulic Ejector

Steam Ejector

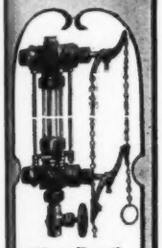
"Safeguard" Automatic Liquid Level Gage

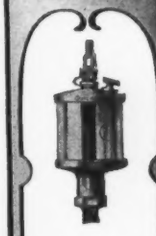
Automatic Injector

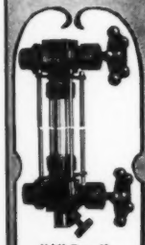
PENBERTHY REFLEX GAGE

(LICENSED UNDER JERGUSON PATENT)

for Oil Field, Locomotive Type, and Marine Boilers


"Navy Type" Liquid Level Gage

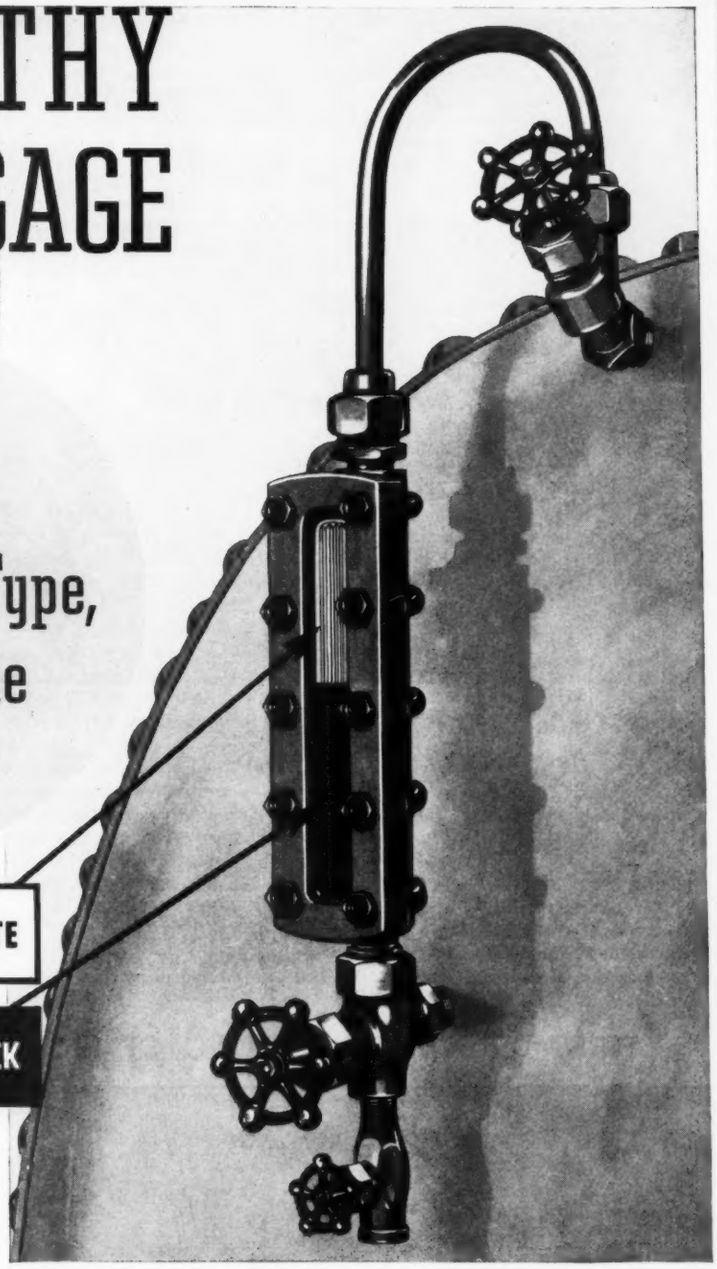

Gas Engine Lubricator


"All-Iron" Automatic Liquid Level Gage

Snap Lever Oiler

THE STEAM SHOWS WHITE

THE WATER SHOWS BLACK



PENBERTHY PRODUCTS

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• The Penberthy Reflex Gage shown here is recommended for working pressures to 350 lb. at 450° F. It is available in both Navy Bronze and Malleable Iron. Other Penberthy Reflex Gages are made in any length desired for higher pressures and for various kinds of liquids. Any leading oil well supply distributor will be pleased to quote upon your particular requirements.

PENBERTHY INJECTOR COMPANY *Manufacturers of* QUALITY PRODUCTS *Since 1886*
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Convention of Petroleum Electrical Association

SHREVEPORT, La., Apr. 6.—The annual convention of the Petroleum Industry Electrical Association will be held in the Peacock Room of the Washington-Youree Hotel, Shreveport, La., April 8-10. Pat O'Connor, superintendent of the electrical department of Stanolind Oil & Gas Co., Tulsa, is president, and Morris Chambers, superintendent of the electrical department of Standard Oil Co. of Louisiana, Shreveport, is in charge of local arrangements.

Program for the three-day convention is as follows:

Thursday, April 8

Morning: Business session.

Afternoon: "Development and Improvement in Telegraph Carriers," by Hezzie Clark.

"Improved Types of Transmission Measuring and Methods," by L. E. Adler.

"Cathodic Protection of Pipe Lines by Use of Corrosion of Scrap Iron in Casks (Hogsheads)," by engineer from United Gas Co.

"Power Rates and Contracts," by David Levy of Magnolia Petroleum Co.

"Application of Carrier Telegraph Printers," by L. T. Gibbs of Phillips Petroleum Co.

7:30 p.m.: Barbecue at Texas Co. Club, Shreveport.

Friday, April 9

Morning: Business session.

"Cathodic Protection of Tank Bottoms," by engineer from Texas Co.

Afternoon: Informal talks and meetings with equipment manufacturers and power companies.

Address by F. M. Austin, Petroleum Electric Power Club.

Saturday, April 10

Morning: Complete business. Field trip in North Louisiana to points of interest.

Bradford Producers Elect

BRADFORD, Pa., Apr. 5.—Lynn G. Smith, Smith Oil Corp., was elected president of the Bradford District Pennsylvania Oil Producers Association by the new elected board of directors. Other officers elected include: Harry M. Ryder, first vice president; Donald B. Tanner, second vice president; Robert S. Pringle, Jr., secretary. A. E. Booth was reelected treasurer. The retiring president is Cornell N. Pfohl, Jr., Kendall Refining Co.

The executive committee is composed of D. T. Andrus, A. E. Booth, George Bovaird, Jr., F. D. Dorn, E. C. Emery, R. M. Haskell, W. J. Healey, Parker L. Melvin, C. N. Pfohl, Jr., H. M. Ryder, W. J. Sloan, Lynn G. Smith, C. F. Stevenson, C. E. Streeter, T. P. Thompson, Jr., and H. J. Walter.

W.P.R.A. Meeting

The April meeting of the technical group of the Arkansas-Louisiana-Texas division of Western Petroleum Refiners Association is to be held Friday, April 9, at the Garrett Hotel, El Dorado, Ark. A special feature will be a paper by R. M. Heine, chief chemist of L. R. MacKenzie, Inc., Des Moines, Iowa, on "Technical Aspects of Emulsions."

THE MARKETS*

CRUDE OIL: *An increase of more than 2,000,000 bbls. in crude oil stocks for the week ending March 27 and approximately the same gain in gasoline inventories for the same period, following several weeks in which inventories rose, have not disturbed the crude markets. Reductions in crude inventories predicted before the end of April.*

REFINERY: *Gasolines stronger, with improvement in shipments reported in several areas. Cold weather aiding demand for furnace oils, with principal grade advanced in East.*

TANK-WAGON AND SERVICE STATION: *Gasoline prices advanced one-half cent in New England.*

FINANCIAL: *Favorable statements for 1936 and expected improvement in first-quarter earnings over same period last year brought improvement in oil stock quotations. Average prices for 30 representative stocks for week ending April 3 were: High, 44.50; low, 42.22; close, 43.95. Week ending March 27: High, 43.15; low, 40.94; close, 42.79.*

**Detailed information in market section.*

Date for Trial at Madison May Be Set Next Week

MADISON, Wis.—Definite date for trial of the government's "oil" cases may be set in federal court here on or shortly after April 16 as a result of Judge Patrick T. Stone's refusal to dismiss the indictments.

At Washington Attorney General Cummings announced appointment of William P. Crawford of Superior, Wis., as special assistant to act as counsel in the cases. Mr. Crawford has been outstanding as a trial attorney in Superior.

Judge Stone on March 31 overruled general demurrers entered by a majority of the defendants and denied a motion to quash filed by the Gulf companies. Further motions by these companies will be heard April 15 and general motions of corporate defendants asking a bill of particulars on April 16. Judge Stone expressed hope all pending motions may be disposed of upon those dates.

Fourteen individual defendants not yet arraigned were granted an extension until April 16.

Trials on the "price fixing" indictments are now scheduled tentatively for June 1, but there is considerable doubt either the defense or the government will be prepared to proceed at that time.

Wilson Pan American Head

NEW YORK, Apr. 6.—Dr. Robert E. Wilson, former vice chairman of the boards, has been elected president of Pan American Petroleum & Transport Co.; American Oil Co., and their subsidiaries, succeeding Jacob Blaustein resigned.

E. G. McKeever was made executive vice president and C. F. Hatmaker vice president in charge of sales. Louis Blaustein, founder of American Oil Co., and Jacob, his son, and Alvin Thalheimer have resigned as officers. The Blausteins will continue as members of the executive committee and as members of the Pan American board.

Texas Statewide Hearing

AUSTIN, Tex.—The Railroad Commission has called a statewide oil and gas proration hearing April 20, preliminary to fixing allowables for May.

FIRST DIRECTORS' MEETING OF RICHFIELD OIL CORP.

Fred H. Bartlett, Charles S. Jones, Homer D. Crotty, William C. McDuffie, Harry F. Sinclair, M. R. Gross, R. W. Ragland, Patrick J. Hurley, Francis S. Baer, H. R. Gallagher and Alexander McDonald

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Natural Gasoline

Texas Company Building Plant

NEW ORLEANS, La.—The Texas Co. has under construction a new combination high pressure-low pressure gasoline absorption plant in its Lafitte field, Jefferson Parish, Coastal Louisiana. The plant will have a capacity of 15,000,000 feet daily with a recovery of 15,000 gallons daily, based on the gasoline content. At present this volume of gas is not available.

One unit of the plant will operate on gas taken from the high-pressure separators operated at 200 pounds. The stripped residue gas from this high-pressure absorber will be piped to Lake Grand Ecaille, 24 miles distant, to supply fuel for Freeport Sulphur Co.'s sulphur plant. Due to the marsh location of the field, the new plant is being constructed on piling foundations. In the field it is necessary to set up all buildings and equipment on piling. Wells, however, are drilled with drilling barges. Petroleum Engineering, Inc., of Tulsa, is building the plant.

Magnolia Completing Plant

Magnolia Petroleum Co. is completing its new natural gasoline plant between Sunray and Dumas, Moore County, Texas, with a capacity of 60,000,000 feet of gas. The plant will commence operation in the middle of April.

Plan New Rodessa Plant

SHREVEPORT, La.—J. E. Jones and associates have announced intention to construct a 20,000,000-foot absorption gasoline plant in the North Rodessa extension area, where five wells have now been completed. Part of this proposed plant's volume will be piped from Rodessa townsite wells.

To Enlarge Gladewater Plant

FORT WORTH, Tex.—General American Oil Corp. has announced plans for enlarging its Gladewater, Tex., gasoline plant from 5,000 to 12,000 gallons per day. The plant at present has a daily capacity of 4,000,000 feet and is connected to about 300 wells. Approximately $200,000 will be spent in the construction program.

California February Production

Natural gasoline production in California during February increased 1,000 bbls. daily to 40,000 bbls. daily according to the Bureau of Mines report for that month. Refinery utilization increased 4,000 bbls. daily and amounted to 32,000 bbls. daily. Stocks increased 155,000 bbls. during the month and on February 28 amounted to 2,145,000 bbls.

Daily average production of liquefied petroleum gases decreased from 1,985 bbls. to 1,679 bbls., of which 461 bbls. were produced in refineries in February. Daily average sales decreased from 2,096 bbls. to 1,961 bbls. Still gas production during February amounted to 1,935,669,000 feet, equivalent on a B.t.u. basis to 505,068 bbls. of fuel oil.

Pipe Line Work

Gulf-Arkansas Line

SHREVEPORT, La.—The Gulf Refining Co. has completed purchase of right of way for a 6-inch line from the main line in South Arkansas, intersecting the trunk system line at Spring Lake, 4 miles south of Homer, where it will connect with Lisbon to the main line at Port Arthur, Tex. The line will be 11½ miles long and cost about $100,000. Construction has begun.

Texas-New Mexico Pipe Line

HOUSTON, Tex.—Effective April 1, Texas Pipe Line Co.'s main trunk line system serving the West Texas and New Mexico districts and extending to Houston, began operating under the name of Texas-New Mexico Pipe Line Co. following a deal in which a joint interest was purchased by the Consolidated Oil Co., Tide Water Associated Oil Co., Empire Gas & Fuel Co. and Texas Pipe Line Co. Operations will continue under the management of Texas Corp.

Fifty-five per cent of the capital stock of the new company is owned by Texas Corp., 25 per cent by Consolidated Oil Corp., 10 per cent by Empire Gas & Fuel Co. and 10 per cent by Tide Water Associated Oil Co. Officials of the new company include: B. E. Hull, president and manager; A. S. Bailey, vice president and assistant manager; Iran McFarland, vice president; J. R. Manion, vice president, and R. B. McLaughlin, secretary and treasurer.

Directors include George J. Hank, vice president of Tide Water Associated Oil Co., New York; A. N. Horn, manager of Empire Pipe Line Co., Bartlesville, Okla.; John R. Manion, president, Sinclair Prairie Pipe Line Co., Independence, Kans.; Charles Fitzgerald, Sinclair Refining Co., Fort Worth, Tex.; A. M. Donoghue, vice president, Texas Pipe Line Co., Houston; Iran McFarland, comptroller, Texas Pipe Line Co., Houston; R. B. McLaughlin, secretary and treasurer, Texas Pipe Line Co., Houston; T. J. McMahon, vice president and superintendent, Texas Pipe Line Co., Houston; A. S. Bailey, vice president and assistant manager, and B. E. Hull, president and manager of Texas Pipe Line Co. at Houston.

The deal involved purchase of 550 miles of 12-inch trunk line, and gathering lines extending from Houston through Crane, Ward and Winkler counties and to Lea County, New Mexico, where it ties into all important production with the exception of the Hobbs field. The deal also includes about 100 miles of 6-inch branch lines extending from the San Marcus station to San Antonio and from Rosanky to the Luling and Darst Creek fields.

At present the line is running approximately 31,000 bbls. daily and new booster stations are being constructed which will increase the capacity of the line to 60,000 bbls. daily.

El Paso Gas Lines

EL PASO, Tex.—El Paso Natural Gas Co. is soon to start construction of three important laterals chiefly to supply natural gas to Copper Refineries. One will be an 8½-mile 6-inch line to Chino Copper at Hurley, New Mex., from the existing 5-inch line near White Water. Another will be a 21-mile, 4-inch line from 12-inch main line near Lordsburg, New Mex., to supply domestic gas in Lordsburg. The third will be a 46-mile 6-inch lateral from the main 10-inch line near Red Rock, Ariz., to Hayden, Ariz. Nevada Consolidated Copper Co. and American Smelting and Refining Co. are the principal consumers at this point. Work on the first line is scheduled to start about April 8.

Enlarging Gathering System

SHREVEPORT, La.—American Liberty Pipe Line Co. is laying lines throughout the Rodessa field, and enlarging its gathering system into the Louisiana side of the field. This same company recently purchased part of the Griswold pipe line system. Oil gathered in this enlarging system will be delivered to Texas Pipe Line Co. for movement to Pure Oil Co.'s refinery at Smith's Bluff, near Beaumont, Tex.

Goldsmith Line

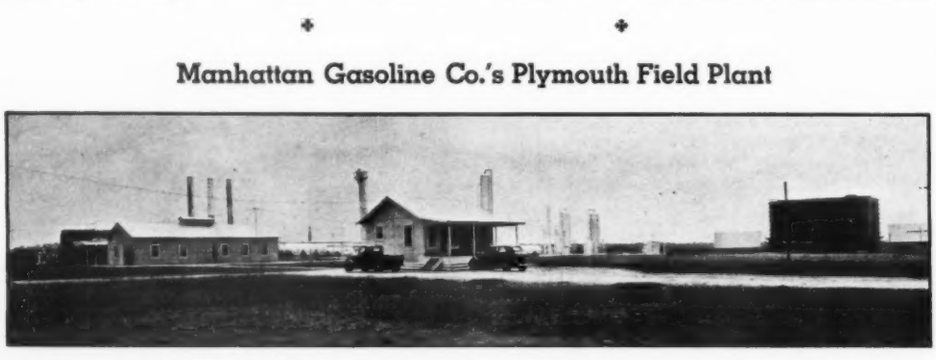
FORT WORTH, Tex.—Shell Pipe Line Co. is surveying for a 48-mile 6-inch pipe line from its Barnsley Station in the Sand Hills area of western Crane County north to the Goldsmith field in Ector County. This line will connect with Shell main line from Winkler County to McCamey and south to the Gulf Coast. It will also connect with the Penn and Harper fields in Ector County, giving them an additional outlet and the Goldsmith field its second outlet. Gulf pipe line division also has a line in the field.

Southwest Texas

CORPUS CHRISTI, Tex.—Crude Oil Terminal Co. of Corpus Christi, Tex., has contracted for erection of two additional 80,000 bbl. storage tanks at its terminal on Corpus Christi harbor. The associated Crude Oil Pipe Line Co. operates a trunk line to the Government Wells area of Duval County, terminating at the tank farm.

Standard of Texas has begun construction of a temporary 3-inch pipe line extending from the newly developed Alta Mesa field to a six-car railroad loading rack on the Southern Pacific line. The field is in southwestern Brooks County, South Texas.

Manhattan Gasoline Co.'s Plymouth Field Plant



Casinghead gas produced in the Plymouth field, San Patricio County, Tex., is processed in this gasoline plant owned and operated by Manhattan Gasoline Co. of San Antonio. A yield of approximately .8 gallon per 1,000 feet is obtained, the plant having a total processing capacity of 25,000,000 feet of gas per day and an output of about 12,000 gallons per day of 22-pound material. The plant was completed in October, 1936, at a cost of about $150,000.

Refinery Expansion

Gulf-Columbia Deal

CLEVELAND, Ohio.—Gulf Oil Corp. has acquired some 300 service stations and other marketing property of Columbia Refining Co. for approximately $2,000,000.

H. C. Meyer, of Pittsburgh, general manager of refined oil sales for Gulf Oil Corp., completed negotiations which secured for his company 275 retail outlets, 95 leased service stations, 150 dealer outlets, 10 bulk plants, 69 parcels of real estate and 35 tank trucks. The equipment is mostly in northern Ohio.

Naph-Sol Plant Shut Down

MUSKEGON, Mich. — Naph-Sol Refining Co. shut down its 6,000-bbl. skimming and cracking plant in Muskegon, Mich., last week for an indefinite period because of labor trouble. About 60 employes were paid off by order of W. E. Anderson, president and general manager, who said the company would take this opportunity to enable the Universal Oil Co. to complete some changes now in progress.

The shutdown followed a conference with members of a bargaining committee named by the recently formed local union of the International Association of Oil Field, Gas Well and Refinery Workers of America.

Pan American Purchases Tract

HOUSTON, Tex.—Pan American Refining Corp. has purchased a 96-acre tract owned by the Petroleum Conversion Corp. at Texas City, Tex., the acreage adjoining the refinery site of the Pan American plant, on the northeast. The refinery of the Petroleum Conversion Corp. is one of the oldest in the area, but has been idle for the past several years. The purchase is seen as a move for possible future expansion of the Pan American Texas City refinery.

Plans are being completed for the expansion of the Port Lavaca, Tex., refinery of the Wood-Moore Corp. The 2,000-bbl. plant will be doubled in capacity by addition of a new tube furnace and tower. Contracts for the construction have not yet been announced. The Wood-Moore Corp. refines Port Lavaca and Placedo crudes.

Humble to Add New Unit

NEW YORK.—Humble Oil & Refining Co. of Houston has closed contract with Foster Wheeler Corp., for construction of a new atmospheric and high-vacuum crude oil distillation unit at its Baytown, Tex., refinery. The unit will have capacity of 18,000 bbls. per day and is scheduled to be completed and placed in operation by the end of 1937.

Danciger Makes Ethyl Contract

Announcement was made this week that Danciger Oil & Refineries, Inc., Tulsa, had entered into a contract with Ethyl Gasoline Corp. by which the former is licensed to use Ethyl and regular leaded gasoline. The mixing will be done at Danciger's Pampa, Tex., plant.

To Manage New Refinery

Philadelphia, Pa.—Michael J. Welsh, formerly manager of the Atlantic Refining Co.'s refinery at Brunswick, Ga., has been appointed manager of the new refinery the company is building at Atreco, near Port Arthur, Tex. He entered employ of the company in 1892 at the Franklin, Pa., refinery, and was serving as assistant manager when transferred to Georgia in 1919.

MICHAEL J. WELSH

Other appointments to executive positions at the Atreco refinery announced are Robert Stewart to be superintendent of the refinery and Harold E. Ramsey to be works engineer. Mr. Stewart was formerly superintendent of the refinery at Brunswick, while Mr. Ramsey was formerly general foreman of the gas and acid department of the Philadelphia refinery. Mr. Stewart joined the company in 1909, and prior to moving to George in 1919 served as assistant foreman at Philadelphia. Mr. Ramsey entered the employ of the company in 1919. Before his appointment as general foreman of the gas and acid department of the Philadelphia refinery he served as superintendent of the power department and later as supervising engineer of research.

Construction of the new refinery at Atreco was started the middle of 1936. It will have a daily capacity of 18,000 bbls. of crude petroleum and is expected to go into operation during the next few days.

Natural Gas

Natural Gas Reserves

Revenues from January sales of natural gas totaled $47,847,100, the American Gas Association reports, a gain of 3.6 per cent over the revenues of $46,183,100 for the same month in 1936.

Manufactured gas revenues declined in January to $31,966,900 compared to $32,683,000 in the corresponding month of 1936. The decline was 2.2 per cent.

Consumers of natural gas at the end of January were reported at 6,753,900, an increase of 3.7 per cent over 6,511,000 at the end of January, 1936. The volume of natural gas consumed during January totaled 129,311,700,000 feet, an advance of 5.2 per cent over 122,953,800,000 feet in January, 1936.

Texas Gas Production

AUSTIN, Tex.—Magnitude of the natural gas industry in Texas was shown in a statistical report prepared by the engineering division of the Texas Railroad Commission summarizing last year's production and disposition.

Total production of all forms of utilized gas was 842,831,541,000 feet, of which 398,439,953,000 feet were dry gas. Sour gas, largely used in the making of carbon black, totaled 176,835,113 feet and casinghead gas amounted to 267,556,475 feet. Manufacturers produced 328,415,532 pounds of carbon black. There was produced 608,457,063 gallons of gasoline.

Illinois Tax on Gas

SPRINGFIELD, Ill.—A bill which places a tax of 5 cents per 1,000 feet on natural gas piped into Illinois from another state was reported out by the senate committee.

The proposal, according to its author, Senator O. P. Tuttle, Harrisburg, has a two-fold purpose in that, he said, it will tend to strengthen the state's coal industry which has been hurt by use of natural gas as a fuel and provide additional revenue for the aged.

The committee reported the bill over the objection of a representative of the Illinois Manufacturers Association who asked the hearing be continued so opposition could be presented.

D. E. Buchanan Is Chairman of Exposition Committee

Visitors attending the May 14 to 21, 1938, International Petroleum Exposition in Tulsa will find overflowing hospitality, adequate housing facilities and all other arrangements made for making the eight days of the exposition enjoyable and profitable to the oil man, according to D. E. Buchanan, chairman of the board of Hanlon-Buchanan, Inc., of Tulsa.

Mr. Buchanan has been appointed chairman of the International Petroleum Exposition committee of the Tulsa Chamber of Commerce. Fellow Tulsans appointed with him are: R. O. Dietler, Stanolind Oil & Gas Co., vice chairman; W. R. Francisco, Deep Rock Oil Corp.; A. O. Olson, Olson Drilling Co.; C. F. Camp, Arrow Drilling Co.; W. K. Warren, Warren Petroleum Corp.; George Manahan, Manahan Oil Co.; R. B. Pringle, Tide Water Oil Co.; Charles Klein, Mid-Continent Petroleum Corp.; N. K. Moody, Sinclair Prairie Oil Marketing Co.; C. L. McMahon, independent operator; John Mabee, Mabee Consolidated Corp.; E. B. Reeser, Barnsdall Oil Co.; Jay P. Walker, National Tank Co.; L. D. Armstrong, Gaso Pump & Burner Manufacturing Co.; C. D. Watson, Carter Oil Co.; Frank Hugill, First National Bank; D. R. Trax, Gulf Oil Corp.; Henry Keplinger, Shell Petroleum Corp.; Van Bennett, British American Oil Corp.; E. Fred Johnson, Fourth National Bank; C. H. Wright, Sunray Oil Co.; T. F. Birmingham, Margay Oil Co.; E. R. Filley, Texas Co.; Ernest Klappenbach, The Oil and Gas Journal; H. M. Cosgrove, Purchasing Agents Association; O. E. McClatchey, Barnsdall Oil Corp.; L. B. McCammon, Ohio Oil Co.; Mark S. Patton, Hurley Gasoline Sales Co.; H. W. Camp, Empire Oil & Refining Co.; Glenn Ames, Phillips Petroleum Co.; W. A. Brownlee, National Bank of Tulsa; Dr. Sidney Born, University of Tulsa.

Santa Maria Line

LOS ANGELES, Calif.—Union Oil Co.'s pipe line in the Santa Maria area has progressed to where the company expects to start conveying oil to tidewater about May 1.

Oil News from Foreign Lands

Tia Juana Field

The Tia Juana field in the Lake Maracaibo district of Venezuela, just north of Lagunillas, probably will be drilled up during this year and the work is expected to increase Venezuelan production materially, possibly reaching a peak of 500,000 bbls. per day before end of 1937.

Venezuelan Oil Concessions, Ltd., Mene Grande Oil Co., and Lago are either now engaged in or face extensive drilling programs in the Tia Juana field. Venezuela Oil Concessions, operating subsidiary of Royal Dutch-Shell, launched the program in the Tia Juana. Mene Grande (Gulf) is in turn forced into development on concessions immediately west and further west, on submerged property, Lago is also compelled to protect against drainage.

The eastern Venezuela wildcat exploration work is without reported change. No new tests have been added. Mene Grande is preparing to resume on its No. 1 Santa Ana wildcat which has been shut down for several months and Standard Oil Co. of Venezuela No. 3 Maturin is becoming one of the most interesting tests, drilling below 5,300 feet.

Protest Dublin Refinery

American equipment and refinery process patents will be engaged almost exclusively in construction of Irish National Refineries, Ltd.'s 10,000-bbl. complete plant to be constructed on the Dublin sea wall.

Despite protests of the three major marketing companies now serving the Irish Free State petroleum demand, plans for construction of the refinery are proceeding and contracts for the various processes to be employed have been negotiated. Irish National Refineries has arranged to construct and operate a Gasoline Products Co., cracking unit, furfural solvent extraction plant and to use the acetone-benzol dewaxing process.

Foster Wheeler Corp.'s English subsidiary, Foster Wheeler, Ltd., has been engaged to supply part of the equipment and to act in a supervisory capacity.

The Irish National complete petroleum refinery will have capacity of about 10,000 bbls. daily and is expected to be ready for operation in the early part of 1938. Equipment will include requirements to produce all light oils, lubricating oils and asphalts, crude stabilization, atmospheric and vacuum distillation, cracking, reforming, chemical treating, solvent extraction and dewaxing.

Irish National Refineries, Ltd., a private company headed by T. C. J. Burgess who is also head of the London and Thames Haven Oil Wharves, Ltd., has made arrangements through its license for an almost complete monopoly on Irish Free State business after its refinery is in position to supply the demand.

The new refinery will be capable of producing more than double the Irish Free State internal requirements. It is a small consuming country and total petroleum imports in 1936 amounted to less than 1,700,000 bbls.

First criticism of the Irish National project developed after the company placed contracts for construction of tankers with German shipbuilders. Since that time, further protests have been sounded by Anglo-American Oil Co., Ltd., Shell-Mex and B.P., Ltd., which contend that the range of Ireland's internal requirements cannot be economically produced from a single refinery dependent upon a single source of crude oil.

Overproduction of certain products and underproduction of others is declared by the three main Irish marketers to be the inevitable result of setting up a monopoly on the country's petroleum business.

Contention is made that maintenance of an exact and unvariable standard of quality demands the blending of oils from varying sources and that changes to which market requirements are subject, demand provision of supplies from equally flexible reserves.

The protesting arguments further contend that:

1. "The possession of a refinery confers no advantage in war time on a country without indigenous crude, and it may even be an embarrassing disadvantage.

2. "No local refinery could produce the range and quality of finished goods required by the Irish market, except at extravagant if not fantastic cost, owing largely to its small size compared with the plants from which the market now derives its supplies."

In view of the Irish Free State government's apparent determination to proceed with its plans for licensing the refinery, the private companies now supplying about 80 per cent of the country's petroleum requirements, declare they are compelled to face complete withdrawal from the business.

Albanian Oil to Italy

Approximately 400,000 bbls. of crude from Albania's low gravity producing fields probably will be delivered during 1937 to refineries in Italy. In a report of the Association of Italian Corporations, it was said regular deliveries have been established and nearly 175,000 bbls. were lifted in Italian tankers and consigned to refineries in Italy during the last six months of 1936. Deliveries probably will be increased gradually as new drilling opens additional production.

Kowait Drilling

Kowait Oil Co. No. 1 Bahrah, wildcat test near the northwestern shoreline of the Persian Gulf, is drilling below 7,200 feet. It is a joint operation of Gulf Oil Corp. and Anglo-Iranian Oil Co. No showings of commercial importance have been encountered.

U.S.S.R. Below Quota

Production estimated at 50,000,000 bbls. for the first quarter of 1937 shows U.S.S.R. falling far behind the quota set at 241,500,000 bbls. for the year. The deficiency is approximately 15 per cent, or about the same margin by which Russian petroleum production missed the quota set in 1936.

Russia's gradual withdrawal from the world petroleum market has been reemphasized recently. In the first place, U.S.S.R. has declined to renew certain contracts with European dealers for supplying gas oil and fuel oil. Furthermore, Russia has recently entered the United States market for small amounts of its high test gasoline requirements.

During January and part of February, snow and freezing temperatures in the Baku district virtually halted operations. Most drilling rigs were shut down, or operating at only a fraction of normal efficiency and pumping operations suffered accordingly. While weather can be charged with part of the failure to produce the quota, lack of adequate equipment remains the paramount issue. There have been references from time to time in the Soviet press that purchases in the United States would be materially increased in 1937 and indications are equipment manufacturers will share liberally if this trade develops. The tour of Soviet officials through American oil fields in 1936 and subsequent conferences after they returned to Russia indicated American methods and equipment would play increasingly important parts in U.S.S.R.

Will Explore for Oil in France

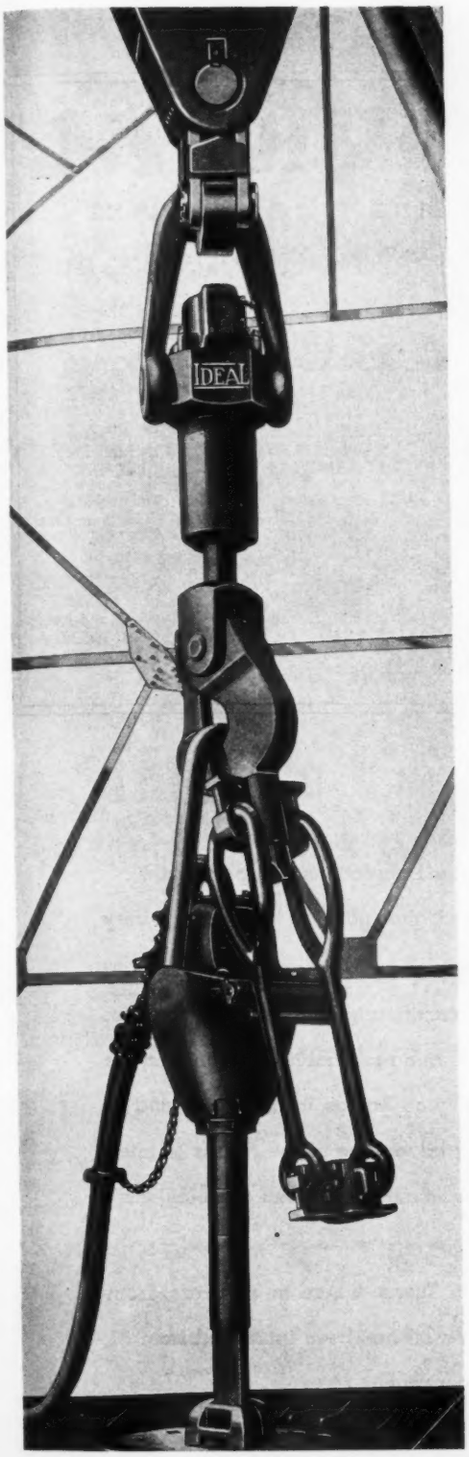
The efforts of France to increase its crude oil production at home or in its colonies probably will be pushed extensively in 1937. Announcements made previously during the year, particularly in the past six months, indicate that the government will become more actively interested in developing a national petroleum reserve.

A special committee has been organized under the National Office for Liquid Fuels to arrange for intensified search for oil in France and its colonies.

French authorities are also giving some attention to the possibility of producing motor fuel and other synthetic petroleum products by hydrogenation of coal. However, in view of the national refining capacity built up under a system of laws and taxes, it is improbable that France's inadequate coal supply will be partially diverted to hydrogenation operations except in the most stringent emergency.

—Brown Bros.

Berlin buses operated on city gas



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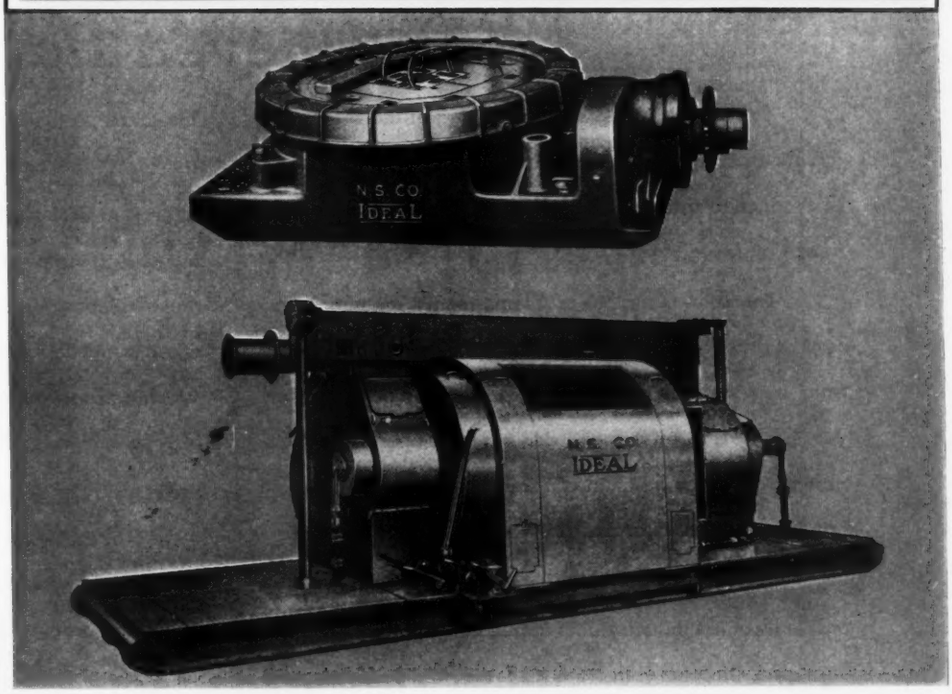

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the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

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An Uneven Race

The papers at the spring meeting of the Southwestern district, of the American Petroleum Institute Division of Production in Dallas last week present a startling contrast.

Those on technical problems record amazing progress, of finding oil by new methods, of increasing recovery from existing fields by practices undreamed of a few years ago, and of reduced drilling and operating costs, matching similar gains in efficiency and cost-reduction in refining. And to what avail?

The answer is found in the papers on the economic problems of the industry. It is a race between the technical man and the tax collector, with the tax collector now far ahead.

For a period in the early history of the industry the technical man had the advantage of being comparatively unencumbered and he made constant progress in lowering costs and passing the saving on to the consumer. Actually, he kept the price of gasoline so low that legislatures were able to add a tax to it without complaint from the public. And he has had that handicap ever since.

Strive as the industry may to effect economies in operations and to increase and improve products, the tax collector is there to reap the advantage by multiplying the taxes on the industry's operations and products.

On the one hand, the industry is bending every energy to find and produce more oil and to get the most out of it to supply the continually increasing demand for these essential products at a reasonable price and, on the other hand, the tax levying bodies in the states and at Washington are taking advantage of the results to intercept whatever savings management and technical skill can effect.

Take the case in Texas, where in 15 years, from 1922 to date, taxation on oil has been increased from $1 to $5.39, a jump of 439 per cent.

Nevertheless, this cannot continue forever. When the tax collector gets so far ahead that the consumer feels the added burden, consumption will drop and tax revenue with it. Technical progress cannot hope to keep pace with the seven league boots of taxation.

The oil industry has been deemed an easy mark for taxation far beyond its share but it can be pushed just so far. There is the suicidal point where taxation reduces revenue instead of increasing it, where the burden on the producer becomes too heavy to carry, and zeal for efficiency is discouraged by the knowledge only the tax collector will profit from it.

Tell them the real story

If you sell your gasoline blind, the motorist knows he has to take his chances—and you have to take your chances on his business

If you just tell him it's "the best" he may not believe you—he's heard that before

If you tell him it's the best because it's Dubbscracked he's interested He tries it and comes back—you have made another customer

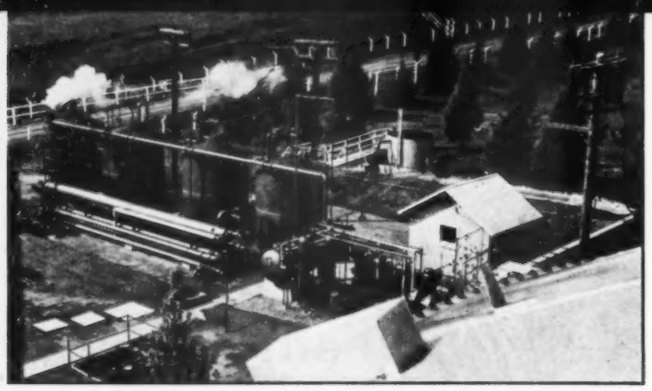
It pays to sell Dubbscracked gasoline

You can sell it in sign language

A sign on every pump to tell them it's YOUR Dubbscracked gasoline

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor



Dehydrating plant. The Union pipe line receives a considerable quantity of oil carrying as much as 20 per cent water and b.s. This is treated by the plant shown using steam heat and electrical treatment. The vapors escaping from the hot oil are returned to the treated oil

Operation of a System Needs

By T. P. SANDERS

The operation of a major pipeline system which transports many different grades of crude oil and from widely scattered oil fields to refineries, sea-going tankers, and to storage tanks; and participates in the distribution of refined and semirefined products, calls for a high degree of organization, careful planning for the future, and unusual resourcefulness in meeting everyday problems.

No quantity of oil, regardless of how small, can be moved through the lines without the use of the telephone or telegraph. All information which may affect operation of the lines must be gathered at one point known as the dispatcher's office, and here the chief dispatcher, knowing the requirements of refineries and tankers, and also the output of the producing areas, directs the operation of the system with the purpose in mind of getting the most profitable use out of available facilities with a minimum of damage and waste. While he receives orders from the pipe-line superintendent, he must think for himself, as time is an important consideration both in everyday operation and in emergencies. He must be able to visualize what is taking place over the entire system, and must be in constant communication with all of the stations and line-walkers.

Dispatcher Problems

One of the most important considerations of the dispatching office is that of keeping room available for oil being produced in each field. It is often necessary to plan two weeks or more ahead in order to avoid forcing a shutdown for lack of tank room. Since new wells, allocation orders, and other production matters affect the rate at which oil must be removed from a field, information of this kind is carried at the dispatcher's office. As a rule, each gathering system is controlled without the direct supervision of the dispatcher, but all deliveries to the main lines are made under the dispatcher's direction.

In the simplest form of crude-oil pipe line a field on one end of the line produces one grade of crude, while a refinery at the other end takes the available oil, or a part of it. A good example of the more typical type is furnished by Union Oil Co.'s Los Angeles Basin system. The construction and operation of this has required the solution of many interesting problems, because the lines pass mainly through thickly settled territory, and handle several types of crude oil, casinghead gasoline, fuel oil, and other products. The problem of keeping these separated is often difficult. Most of the lines pass along highways and through yards, which makes the immediate detection of leaks imperative to avoid damage and danger.

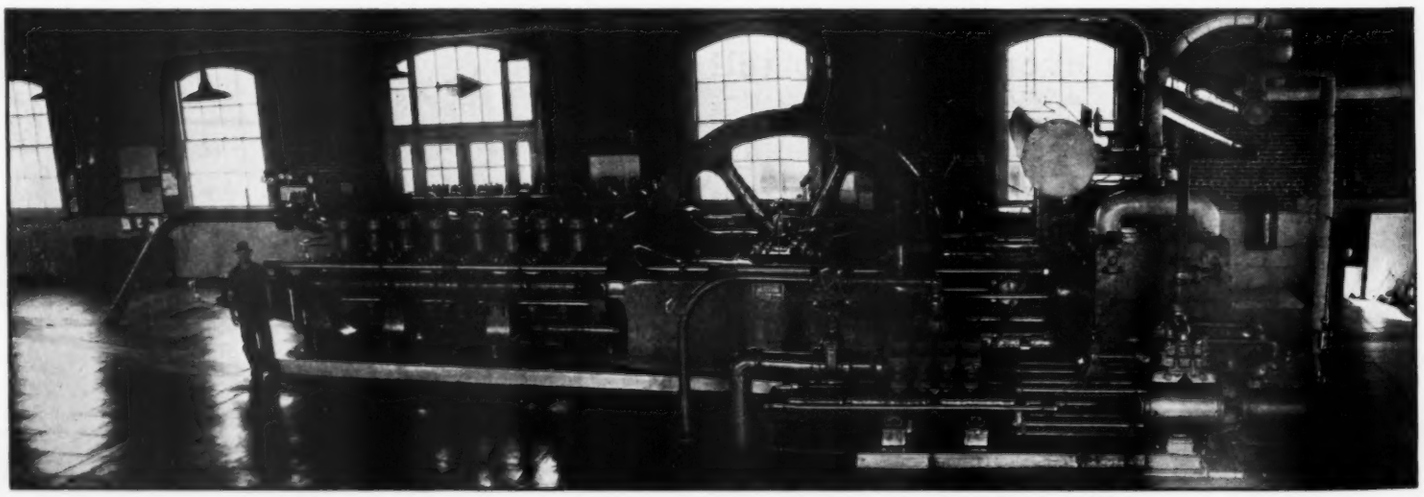
Change of Service

Often fuel oil is pumped through a line on this system which has been carrying crude oil. This requires preparation, which is directed by the dispatcher. Because fuel oil is viscous and will not flow readily at low temperatures, it is put into the line at about 180°. To avoid buckling or parting the line due to sudden temperature change, the temperature of the line must be raised slowly by heating the crude before the change is made. Steam from the pump exhausts is used in heat exchangers to bring the temperature of the crude up about 10° per hour until it is nearly as hot as the fuel oil which will follow it. Steam is used direct from the boilers to obtain more intense heat. When the change is made from fuel oil back to crude oil, the first crude introduced is heated to a temperature approaching that of the fuel oil, and the heating is gradually diminished over a period of about 24 hours until normal temperature is reached. Fuel oil is easily contaminated in a line. Its flashpoint must be 150° or over, and since the flashpoint of crude is usually below zero, a small inclusion of crude will prevent fuel oil from meeting specifications. It is therefore necessary to make frequent tests for flashpoint, and any oil with a flash at less than 150° is classified as crude oil, although it may consist almost entirely of fuel oil.

Refined Products

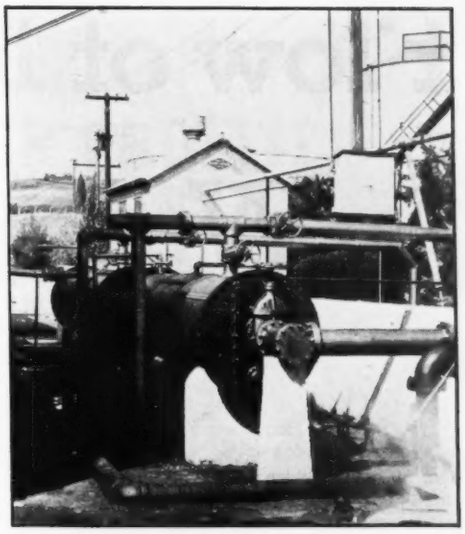
In transporting refined products, such as kerosene, contamination is avoided in making changes by displacing the first fluid from the line with water before introducing the second fluid. The water is later drawn off of the bottoms of the tanks. The dispatcher has on hand a chart showing the capacity of all lines, so he is able to tell what quantity of water should be used. This chart is also used in predicting the time of shutoffs, and for keeping track of the oil in the system.

The dispatcher receives reports from the stations on the line every hour. These reports include volume of fluid pumped, pressure, temperature, and any other information which may be pertinent. Volume is sometimes taken from meters, but usually it is calculated from a stroke-counter which records the number of movements taken by a reciprocating pump. The attendant determines the volume by multiplying the displacement of each stroke by the number of strokes. In case the pressure or the volume at a station drops when it cannot be accounted for, the attendant immediately notifies the dispatcher. If he cannot account for the drop he orders all stations supplying that line to be shut down. Stations on the downstream side of the break are generally kept running for a time in order to remove the oil from any broken section and draw in air through the break. Often the station upstream "backsucks" on the broken section to reduce the escape of fluid. Every station on the system is provided with con-



View of large steam pump in use at Union Oil Co.'s plant near Brea, Calif.

Modern Pipe Line Unity of Action



Crude oil heaters. These are used to warm the line before running hot fuel oil or heavy crude. Both exhaust and live steam are used

nections which make it possible to pump in either direction. The dispatcher has profiles of each line showing elevation and slopes, and by these he is able to tell which gates should be closed to save the most oil. Crews are sent out to find and repair the leaks. The large companies all cooperate in attempting to prevent damage from pipe-line leaks, since large sums of money are usually involved. Often it is not immediately known whose line it is that is leaking, so several companies are notified, and whoever can arrive first makes a repair or confines the escaping oil. The dispatcher can usually tell from his maps whose line it is, and notifies the proper repair crews.

Heine-marine type boilers in use on Union Oil Co.'s pipe line system

Leaks in the casing-head gasoline lines are sometimes hard to find. It is sometimes necessary to fill the line with water and apply pressure to make the leaks show at the surface. Leaks are especially hard to detect in hot weather, because expanding gas may more than compensate for the loss in volume. The dispatcher corrects for expansion, using temperature readings reported along the line, but since the quantity of volatiles varies, the corrections are necessarily inaccurate. Tanks are gauged every six hours, and at that time all of the oil is accounted for, so that the line loss is determined.

The dispatcher has before him a large map of the pipe-line system on which each main gate is indicated by a peg. The peg is removed to show an open gate. Probably the most useful purpose of this chart is that it helps to avoid starting up pumps against closed gates, which usually means a line break. When a change is to be made on the line, it is the dispatcher's duty to notify the proper station attendant as to what gates to open or close, what pumps to start up or shut down, and what tanks to run oil from, or pump into. The communication is practically all by telephone. The messages are all read back by the attendant, and they are written at both ends of the line to avoid mistakes. When the order has been carried out, the dispatcher is notified what time the operation took place. Before an attendant leaves his station, if he will be out of reach of the dispatcher, he calls and obtains permission. The dispatcher can generally tell whether or not he will be required within the following two hours, since he is planning far ahead, and emergency operations, such as line breaks, are scarce.

Crude oil transported by this system goes either to a refinery at Wilmington, to tankers for shipment to other Pacific Coast or foreign ports, to storage, or to be sold locally. A modern refinery does not take whatever oil is supplied to it, but selects an oil, or a blend of oil, from the available supply, which will give the proportion of refined products most desirable under existing marketing conditions. This, however, is not always the case, because often the supply of the most desirable oil is limited, or the pipe line becomes overstocked with another grade, which must either be sold or run to the refinery. Constant communication between refinery and pipe-line officials is necessary, and the dispatcher directs oil movements according to agreements made with the refinery. He is notified several days in advance when a ship is due to arrive to take on an oil cargo, so that he can have sufficient supply in storage for loading.

Weather Influences

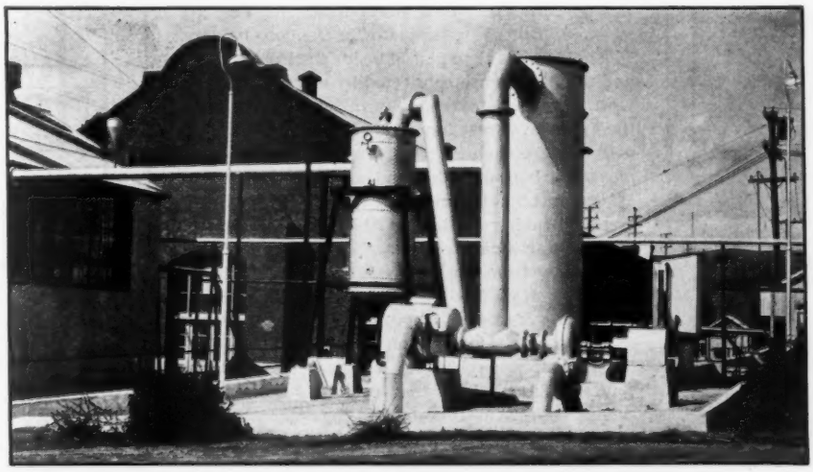
Each station on the pipe-line system is supplied with standard rainfall gauges, and every 24 hours the precipitation is reported, or oftener in case of heavy rain. In cooling the lines, the rain affects movement of oil, and heavy rains make it necessary to watch for washouts at river crossings.

If an earth tremor is felt by the dispatcher he immediately communicates with all of the stations to find out how severe it has been. If it has been small, the only precaution taken is to watch pressures and volumes more closely throughout the system to detect leaks. If a larger earthquake is felt, the entire system is shut down. The line is then walked and tested before the pumps are again started.

In Case of Fire

In case a tank catches on fire, the dispatcher must notify the officials, arrange for pumping oil from the bottom of the burning tank (if this is possible), shut down movements of oil to nearby tanks, order out crews and the correct quantities of foam-generating powder, and arrange for other important details.

While many pipe lines are operated without a detailed system of dispatching, and the pipe-line network described here was used for 22 years without the organized system it has today, modern conditions are demanding the use of the same sort of dispatching system used on the railroads for safety and economy.



Carbon-dioxide plant. Here the burned gases are taken from the flues of the Heine-marine type boilers, cooled, treated, and delivered by blowers to 750,000-barrel oil reservoirs to occupy the space above the oil as a fire-prevention measure. The motor-driven blowers are seen in the foreground

Crankcase Oil Viscosity Numbers

The 1937 edition of the S.A.E. Handbook will be issued by the middle of April and will contain all of the current official S.A.E. standards and recommended practices, including the new and revised ones adopted by the society in January, 1937. Because of the extensive use of the S.A.E. viscosity number classification for automotive crankcase oils, and the issuing of specifications for 1937 by petroleum companies and others, attention is directed to a change made in the classification for oils designated as S.A.E. No. 40 and S.A.E. No. 50.

The maximum viscosity at 210° F. for S.A.E. No. 40 has been changed from "less than 75 seconds" to read "less than 80 seconds," and the minimum viscosity at 210° F. for S.A.E. No. 50 has likewise been changed from 75 to 80 seconds. This change was effective as of January 15, 1937.

Flow of Mixtures of Oil and Water Through Sand

By F. B. PLUMMER, J. C. HUNTER, JR., and E. H. TIMMERMAN
University of Texas

Reduction of the per cent of salt water in oil wells is a major problem in oil production. More than twice as much water as oil is produced in the partially depleted fields of the United States today. The economic loss due to increased pumping costs, handling of emulsified oil, and losses due to unrecoverable oil trapped by water in a sand fully justifies a thorough study of methods of reducing salt water production.

The results of the work by D'Arcy,[1] King,[2] Fancher, Lewis and Barnes,[3] Wyckoff, Botset, and Muskat,[4] and others have shown that, when water alone or oil alone flows through sand, the rate of production increases as the pressure, thickness, and permeability of the sand increases, and it decreases as the viscosity and distance the oil has to flow increases. Accordingly, a sand bearing both water and oil should under constant condition produce water and oil in quantities that are proportional to the viscosities of the two fluids. It is well known, however, that in most fine-grained sands these proportions do not hold. Due to interfacial tensions between the water and oil, to adhesion tensions between the liquids and the sand, factors commonly referred to as capillary phenomena, a much larger proportion of water than oil is obtained from fine-sand reservoirs. It is also well known that in reservoirs having relatively coarse-grained sand and rapid rates of flow the water "cones" around the well, and an abnormal percentage of water is produced. If the well in the coarse-grained sand is "pinched in" and allowed to produce very slowly, the "cone" is said to be depressed and the proportion of oil to water is generally increased. On the other hand, if a well producing from very fine-grained sand is "pinched in," an increase in the percentage of water production often results.

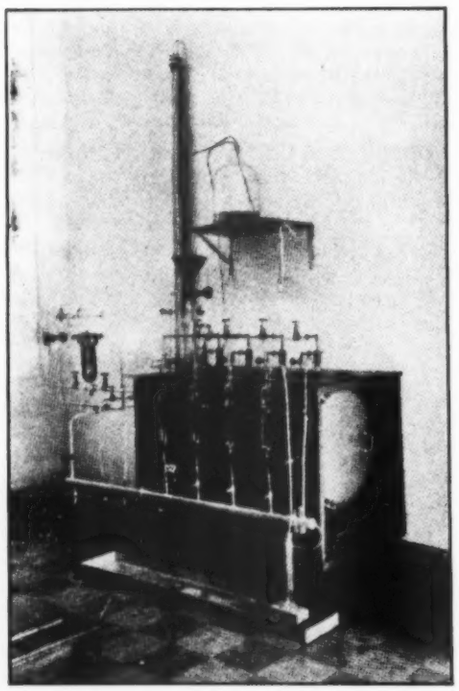


Fig. 1-A—Apparatus for measuring flow of oil and water through sand. Exterior of pressure cylinder showing flow lines and graduated receivers

***A.P.I.*—Presented before the Southwestern District Production Division at Dallas April 1 and 2**

Aided by a fellowship grant from Shell Petroleum Corp., investigations have been carried on at the University of Texas to study the factors that affect the water-oil ratios of production from sands having a texture and permeability similar to those in oil fields.

The equipment consists essentially of a large, horizontal, iron reservoir, capable of maintaining a measured pressure delivered from a compressor. A 16-gallon pan containing water and oil is placed inside the reservoir. Dried and thoroughly sieved sand is placed in special screened core holders and packed tightly between the two brass plates that are drawn together by bolts. The pressed sand is in the form of cylindrical cake or core 4 inches thick and 4 inches in diameter with a hole three-quarters of an inch in diameter extending vertically through the center. Brass nipples are screwed into the upper plates of the core holders. The holders are then placed inside the iron cylinder and the nipples are connected by means of unions with pipes that extend out through the side of the cylinder. Brass inner tubes one-eighth inch in diameter are then inserted through the outer nipples to the bottom of the sand cores, and are packed off at the outer surface of the cylinder by means of a special tubing head. The finished assembly furnishes an artificial "reservoir" from which oil and water flow from the inner pan through the sand into the bottom of the "well" and thence through the "string of casing" from the "well" to graduated receivers on the outside of the cylinder. The differential pressure between the reservoir and the "bottom of the hole" is measured by a manometer. When air pressure is applied to the reservoir, fluid is forced through the cores to the receivers outside and may be returned as rapidly as produced to the reservoir through a lubricator, so that the fluid level inside the reservoir is kept approximately constant. The pressure, the time required for any amount of fluid to be produced, and the ratio of water to oil are recorded for each condition under which the apparatus is operated.

The oil and water in the pan are so proportioned that the contact between the two liquids comes exactly to the middle line on the sand. The water used in the first experiment had a viscosity of 1 centipoise and the oil a viscosity of 1.65, and the sand grains ranged between .105 and .074 mm. in diameter. A comparison of the viscosities of the two liquids indicate that water production should have been 62.3 per cent, and the oil 37.7 per cent, if no water "coning" or other interference took place. The sand was wet with oil before it was submerged in the liquids, and oil flowed through first; water gradually broke through and increased to a constant oil-water ratio after a few hours of production.

The water-oil ratios under these conditions did not conform to the theoretical percentages, even when the pressure differentials amounted to only a few inches of water. The average water production after a long period of flow and after equilibrium was established was 75 per cent and the oil production 25 per cent, indicating the presence of a water "cone" in the sand. The cylinder head was then opened, the core holders removed, the supporting plates detached, and the sand cake sliced vertically. The water cone was clearly visible in the vertical sections of the cake. It is interesting to note that the water cone was formed regardless of the pressure differentials employed. These experiments show that in laboratory work, the rate

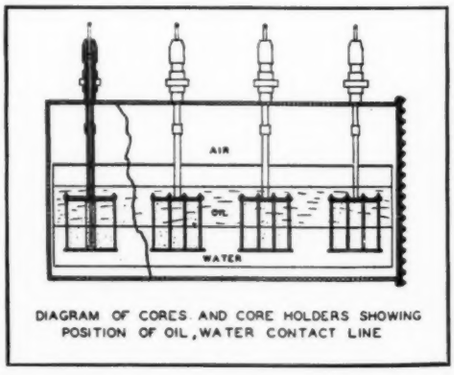


DIAGRAM OF CORES AND CORE HOLDERS SHOWING POSITION OF OIL, WATER CONTACT LINE

Fig. 1-B—Apparatus for measuring flow of oil and water through sand. Cross-section of interior of cylinder showing position of the cores in water and oil

of production has little to do with the formation of a water cone in very fine sand, and that the encroachment of water around a well is not altogether dependent upon pressure. The water percentage in some fine-grained cores was slightly less at high rates of flow than at low rates. These differences are due, probably, to capillary action,

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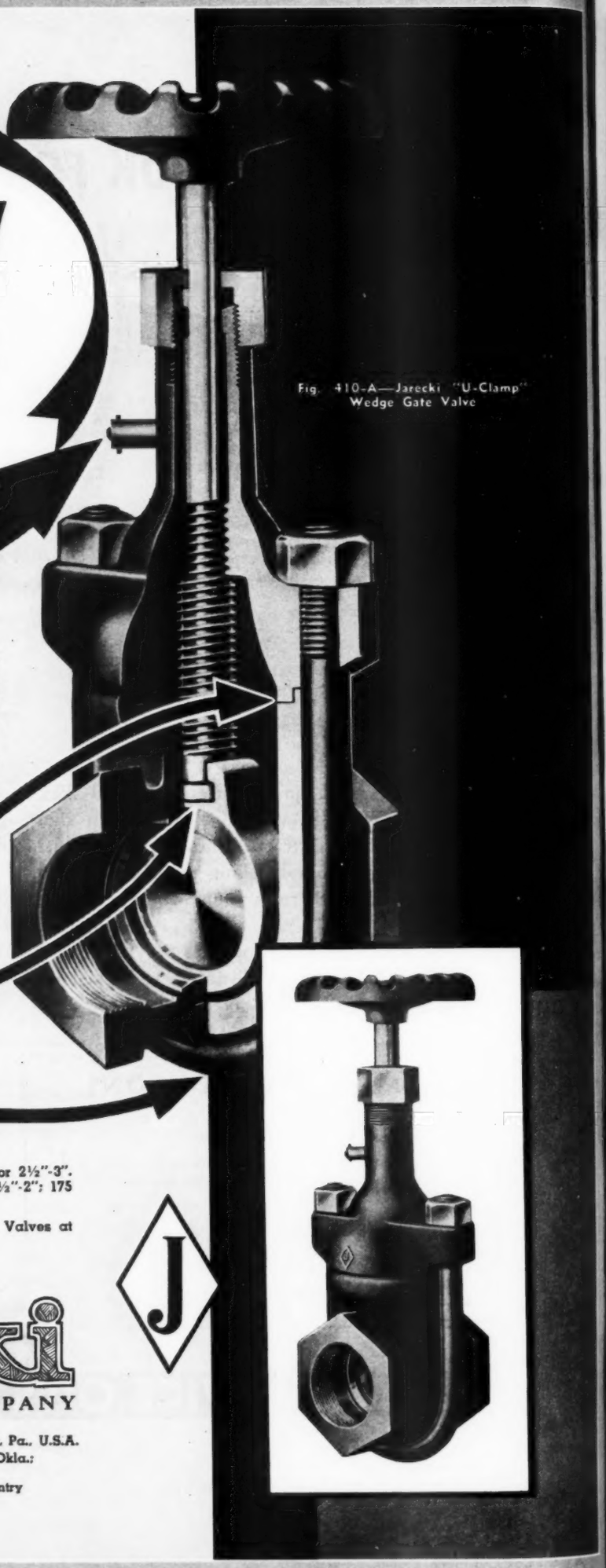

Fig. 410-A—Jarecki "U-Clamp" Wedge Gate Valve

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which is more effective in the area immediately surrounding the well than in the interior of the reservoir, and it is more effective at low differential pressures than at high differential pressures.

The results indicate that water encroachment in artificial fine sand reservoirs can not be successfully controlled by regulating the rate of production. Accordingly, other methods are needed to reduce the water entering the "well."

Reduction of water production by the use of chemicals has been attempted for many years with some success, but none of the processes have come into general use. The precipitation of silicic acid (water glass) in the water strata by injection of sodium silicate and hydrochloric acid has been tried by Mills[6] and others. Recently silicon tetrachloride and antimony trichloride have been used by Kennedy.[7] Neither of these latter chemicals require the addition of a precipitating agent because they react with the water in the sand to form a heavy precipitate that is designed to seal partially the pores of the reservoir. A number of soaps and similar compounds have been used to precipitate certain constituents of the salt water in order to form insoluble residues to plug the interspaces. Some work has been done on the use of surface tension breakers to cause water "cones" to "drop" to the normal water table.[8]

Our investigation has been along the line of changing adhesive tensions within the reservoir sands rather than causing precipitation of chemicals and sealing the pores. Various chemicals have been added to the water layer in the reservoir of the apparatus previously described. Selection of the best agent to add to the water has been investigated by measuring the surface tensions with a ring tensiometer and interfacial tensions between water and different oils with the apparatus devised by Bartel[10] for this purpose, and by observing the effect of various chemicals on the tension development. A better method appears to be to measure the rate of flow of the variously treated fluids through a cell of known permeability. A change in the adhesive tension between the fluid and sand is indicated by a change in rate of flow.

The chemicals found most satisfactory are those that reduce the surface tension of water and do not mix with oil—namely, the various kinds of soaps, such as laurates, stearates, and oleates of sodium and potassium.

The effect of small amounts of soap solution on the oil-water ratio has been tested in the fluid mixture in the reservoir just described. The average water reduction when the kerosene and fresh water were flowing through fine sand (140-200 screen) was from 75 per cent before the treatment to 5 per cent after treatment, as indicated in the following table:

WATER REDUCTION

	Viscosity (CP)		Permeability (Darcys)	Pressure (Hg)	Fluid produced cc.	
	Oil	Water			Oil	Water
Before treatment	1.7	0.95	2.5	5.1	25%	75%
After treatment	1.7	1.05	2.5	5.1	95%	5%

The change is noticeable almost immediately upon adding the soap solution, and a constant ratio is reached within 30 minutes. It is not due to the depression of the water cone in the sand. The sand cakes were sliced immediately after the flow was stopped, and a large water cone plainly discernible around the "well" reached within 1 cm. of the top of the sand. The amount of water reduction was too large to be explained by water-cone depression. Even if the cone were depressed to the original water table, the theoretical water production through the sand should be approximately 60 per cent of the total fluid and not 5 per cent.

A better explanation is to be found in the adhesive tension of a soap film to the surface of the sand, which apparently has the effect of reducing the size of the interspaces through which water can flow at ordinary pressures. It is thought that molecules or colloidal particles of soap are adsorbed by the sand. These colloidal particles gradually build up a film about each individual sand grain, a condition that increases the friction in the interspaces through which the water must travel. Since the soap does not mix with the oil, it affects the passageways occupied by the water and not those filled with oil. In other words, it retards the flow of the water and not that of the oil. No precipitation takes place within the sand, for the water entering and leaving it is perfectly clear. The adsorptive force of silica for water has been discussed by Nutting.[11]

Much more satisfactory results have been obtained with fresh water than with oil-field brines, because most soaps are insoluble in salt water. When East Texas oil field waters were treated with soaps, the reduction of water yield was only 5 per cent to 10 per cent. The problem in the use of brines in these experiments is to find appropriate chemicals that are soluble in the various oil-field salt waters.

This paper merely presents the preliminary results of a series of laboratory investigations. The work is being continued, and it is hoped additional information regarding the behavior of fluid mixtures in fine sands will be obtained. More knowledge of the flowing properties of the various fluids and of their application to oil-water ratios may later present a more satisfactory solution of the oil-field water problem and thus become of economic interest. It is not claimed that the methods employed in our laboratory are directly applicable in field conditions.

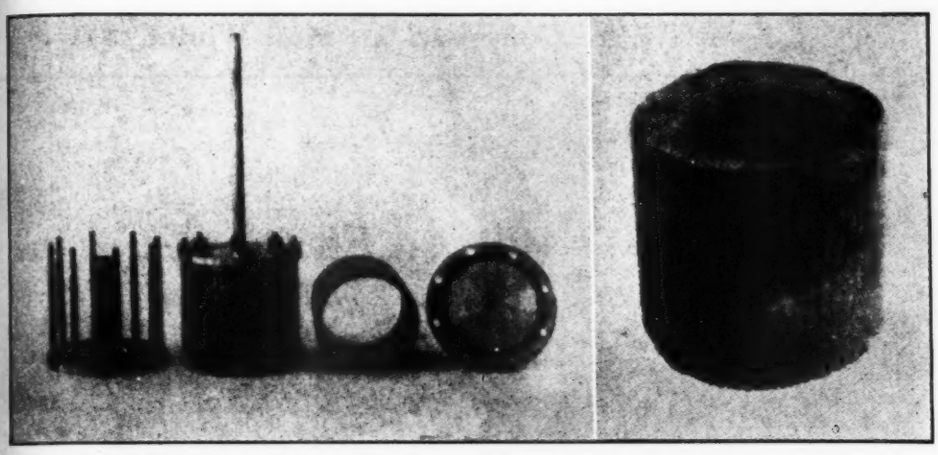

Fig. 2—(Left) Sand containers as screens showing method of connecting flow lines. (Right) Core of sand after moving core-holder

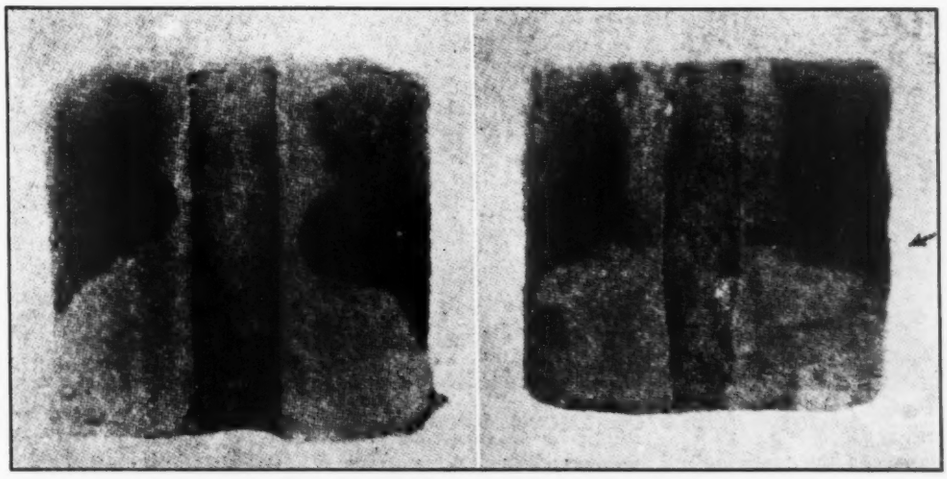

Fig. 3—Cross-sections of cores showing water "cones." (Left) Low pressure, slow production in fine-grained sand (140-200 screen). Production largely water. (Right) High pressure rapid production. Slight increase in per cent of oil. Note that a little oil, indicated by dark shade, is breaking through cone at spot indicated by arrow

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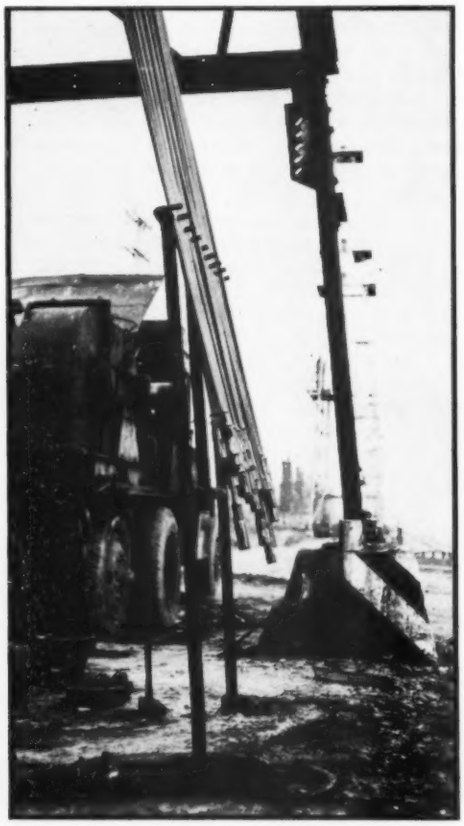
OPERATING IDEAS

Efficient Rod Hanger

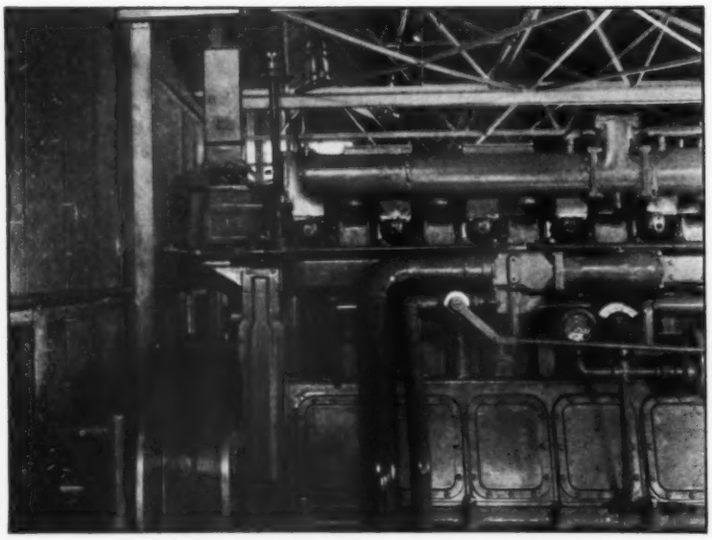
At Huntington Beach, California, Standard Oil Co. uses the method shown in the accompanying photograph for keeping rods hung in the derrick out of the way of the rod and tubing crew. The rack was made by the welder from 2-inch junk pipe and is carried on the pulling unit. In the concrete floor at each well 2½-inch pipes have been installed at the proper distance apart so that the legs of the rack can be slipped into them. The fingers at the top of the rack keep the rods in order and prevent them from piling up on each other so that they are easily separated when they are to be run back into the well.



Farm Tractor Converted to "Mud Wader"

—J. E. Hampson

Here is shown a farm tractor converted to a four-wheel "mud wader" and used in the Rodessa, Louisiana, field over roads impassable by car or truck. The farm tractor was made suitable for this purpose by installing high wheels, a small winch for light duty and a cab for protection against weather. The wheels are equipped with heavy-tread tires to obtain maximum traction.



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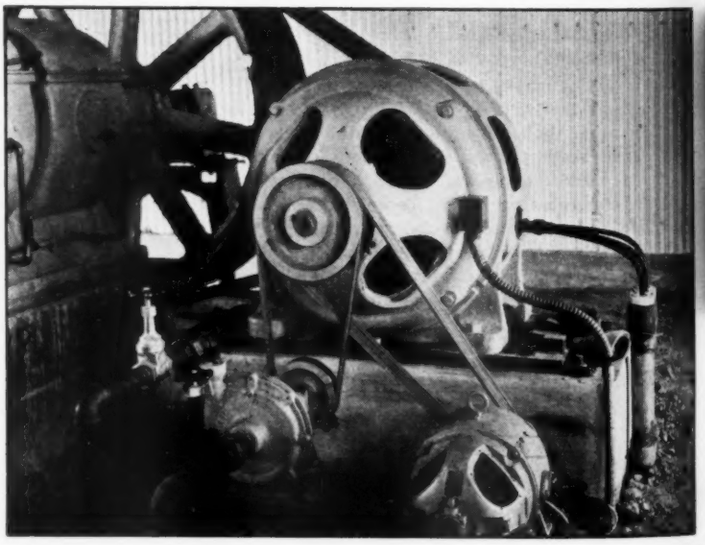

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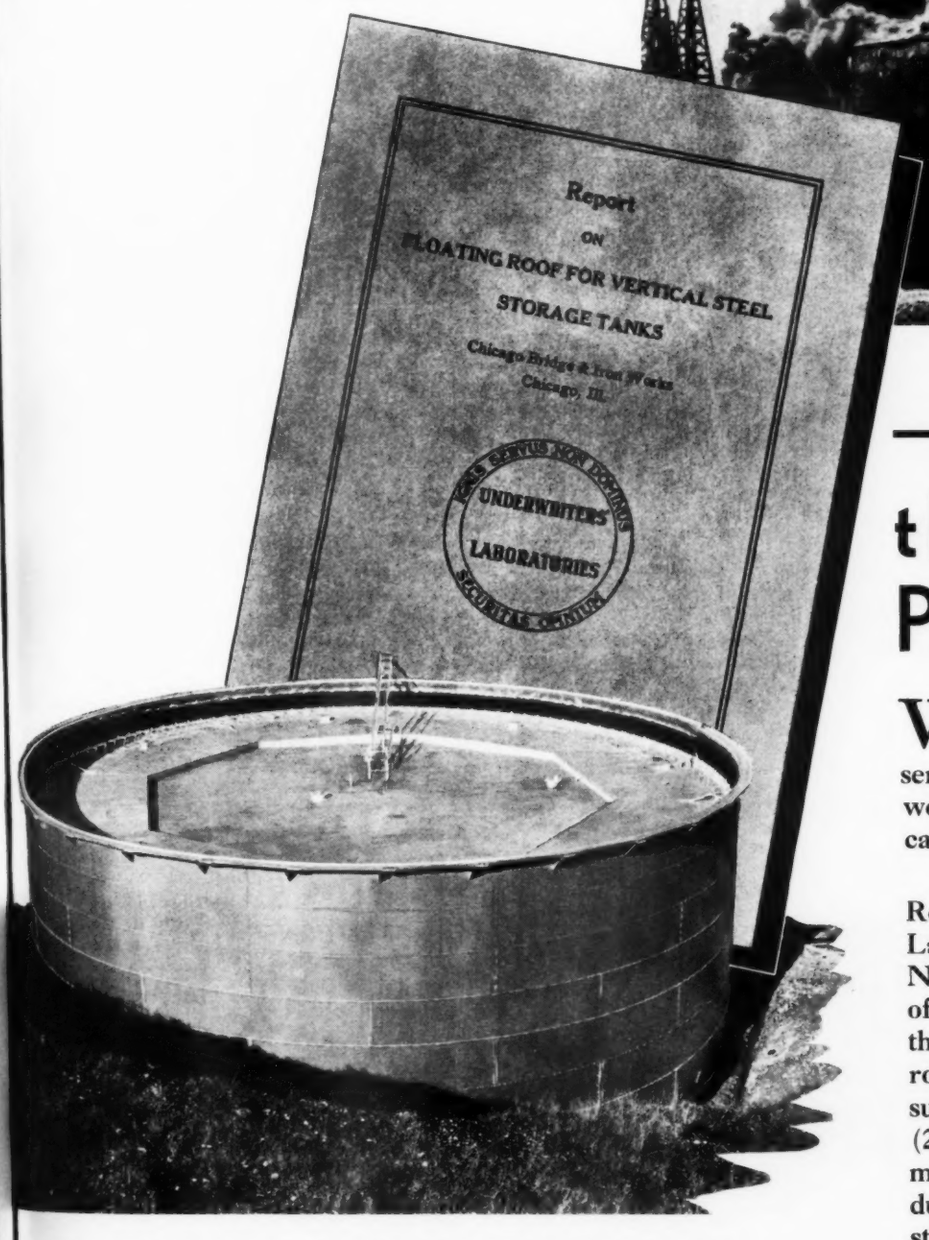

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A Discussion of Oil Field Steam Generating Plants

By GEORGE B. KITCHEL
Humble Oil & Refining Co.

Steam, due to its flexibility in being readily adapted to all of the power operations coincident with drilling, has long been recognized as the most desirable form of power for this service. During the past several years the steam demand of the drilling rig has increased appreciably, and manufacturers of steam equipment have had constantly to make improvements to meet this demand and at the same time ward off competition from other forms of power. New developments such as the integral superheater boiler and the separately-fired superheater have been introduced, also improvements have been made in the saturated boiler and in auxiliary equipment. In order that some of these improvements might be better appreciated, and some of the difficulties arising with the use of this more modern equipment be better understood, it is perhaps worthwhile to analyze and discuss the most important of these developments. Some of the points considered have been dealt with in previous papers by other authors, and many are well understood by the majority of operators; however, as steam will probably remain the most commonly used source of power for drilling service a review of these points might be beneficial.

Prior to 1929, which year marked the advent of superheated steam for drilling service, few changes, other than a gradual increase in the size and rated working pressure of the boiler, were being made toward improving the steam generating plant. In most cases the steam demand was low and a reasonable number of boilers would supply an abundance of steam to the rig, consequently little attention was paid to the steam generating capacity or the economic operation of the plant. Occasionally, as the manufacturers felt that a larger boiler was needed they made a boiler with longer flues to obtain more heating surface upon which its size was rated, and at the same time increased the shell thickness and rated working pressure. Since each enlargement of this nature resulted in a noticeable increase in power at the rig, it was not apparent at the time, that there was a limit to beneficial flue length with the available draft, and that the noticeable increase in power was largely due to the higher pressure. From the standpoint of cost and weight it was much more advantageous to add heating surface by increasing the length and in some cases the number of flues than it was to obtain it by increasing the size of the firebox. As little was known about the rate of steam generation of the two surfaces, the boilers were gradually reaching a point where they had sufficient pressure but were lacking in steam generating capacity. With the trend toward faster and deeper drilling it was apparent that an abnormal number of boilers would be required to meet the steam demand, unless the generating capacity of boilers was improved. The boilers were already too heavy in comparison to transportation equipment and by far the heaviest single units of the rig, so it did not seem logical to continue increasing their size and the transportation difficulties involved unless their steam generating capacity could be appreciably improved.

Superheater Development

In line with this, manufacturers set out to try to improve the steaming capacity and efficiency of the boiler and if possible increase the work capacity per pound of steam so that the weight of the boiler could be kept at a minimum and the size of the battery be kept within reason, as other forms of power were gradually encroaching upon it as competition. Since the advantages of superheated steam in power plant service were well known and in line with the problem at hand, it was logical to turn to the development of a superheater-equipped boiler. One manufacturer, in conjunction with the Superheater Company, developed a design of an integral superheater oil country boiler and two 65-horsepower boilers were built according to this design. With the cooperation of a major oil company, these boilers and two similar saturated boilers were tested under field conditions to determine their comparative merits.

A.P.I.—Presented before the Southwestern District Production Division at Dallas April 1 and 2

GEORGE B. KITCHEL

A report[1] on these tests, compiled by Harris and Eckel, engineers with the oil company involved, showed that the superheater boilers effected a saving of 23.5 per cent in the steam consumption of the rig, which is a 23.5 per cent reduction in the water requirement together with a corresponding reduction in scale formation. The fuel consumption for the rig was reduced 26.2 per cent, while steam flow line radiation losses were found to be 50 per cent less than those for saturated steam and the loss in steam line pressure 30 per cent less. It was noted that the speed flexibility and capacity of the engine was appreciably increased, since it was necessary to pull several more stands of drill pipe with the drawworks in low speed when saturated steam was used than when superheated steam was used. Likewise, it was noted that when operating with the same steam pressure at the boilers, the fluid horsepower of the pump was increased an average of 16.3 per cent when using superheated steam. The average discharge pressure of the pump was increased from 347 pounds to 387 pounds while the average speed was increased from 57.4 to 60.4 strokes per minute. The average steam consumption was reduced from 9,053 to 8,010 pounds per hour. This shows a gain in the amount of work done by the pump with a decrease in the pounds of steam required.

During these tests the average degree of superheat at the boiler was 122°F. and at the pump and engine 58°F. This loss in temperature is abnormal, and is attributed to the long steam line and great number of elbows required for the meter setting which would not be used in a regular installation; consequently, these savings and advantages can be considered as the minimum for this degree of superheat at the boiler. Saturated steam under these same conditions showed a moisture content of 17 per cent at the pump, which, with the quantity of steam used, amounted to some three gallons of water per minute, due to moisture, passing through the equipment. With the present superheater boiler it is possible to obtain twice the degree of superheat common to these tests; consequently, if all detrimental effects due to the high temperature can be eliminated it is possible to effect much greater savings today.

While the cost and weight of the superheater boilers were greater than for correspondingly rated saturated boilers it was thought that the advantages to be gained were sufficient to warrant their use since the additional cost would readily be offset by savings and in some cases it would be possible to reduce the number of boilers required. On this basis, superheated steam boilers were introduced into the oil country, and as the demand for boilers was great at this time (1929-1930) many were sold throughout the country. During the time this boiler was being designed and tested the size and working pressure of the sat-

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urated boilers were increased, consequently most superheater boilers were made in the larger sizes, namely 110 and 125-horsepower, with working pressures of 250 pounds or greater.

During the latter part of 1930 and the first part of 1931 economic conditions changed such that the demand for drilling equipment was reduced, also difficulties arose in the use of superheated steam and as a result the purchase of superheater boilers fell off appreciably. The most important difficulty experienced with superheated steam was in providing sufficient lubrication to the steam pistons and valves of the engine and pumps. At the same time considerable trouble was experienced with the superheater boiler itself; it was found to be somewhat harder to fire than a saturated boiler of equal rating, and in certain localities presented a difficult cleaning problem. In many cases trouble was had due to the burning of the superheater elements. Since these four disadvantages cover in a general way most of the difficulties experienced with superheated steam they can well be discussed.

When the manufacturers decided that superheated steam had an advantage over saturated steam they quite naturally assumed that the higher the degree of superheat they could obtain in their boilers the more pronounced the advantages would be and the greater the savings to the operator; consequently they designed their boilers to obtain as high a degree of superheat as possible. While this theory of increasing the advantages by increasing the degree of superheat was perhaps correct, it led to one of the major complaints against superheated steam, that of improper lubrication of the steam pistons and valves of the pumps and engine.

Lubrication

The problem of lubrication was not overlooked but its magnitude was not realized by the manufacturers. Had it been possible to foresee this, the trouble with superheat from the standpoint of lubrication could readily have been remedied by starting with shorter length superheater elements, sacrificing a portion of the advantages of superheat until lubrication problems had been better overcome.

High temperature lubricants had little or no application in oil field service prior to the introduction of superheated steam and while force feed lubricators had been used to some extent, they were not considered entirely satisfactory for oil field service. Nearly any type of lubricant, or any lubricator, would lubricate the steam pistons and valves with saturated steam; consequently the operators were not trained to appreciate the importance of proper lubrication, and many pistons and valves were damaged by the use of superheated steam.

Many operators who purchased superheater boilers preferred to continue using hydrostatic lubricators rather than resort to force feed lubrication with the difficulties and expense that at the time seemed to be inherent with it. There has been considerable controversy as to whether or not hydrostatic lubrication is suitable for use with superheated steam. In regard to this it is perhaps well to point out that the hydrostatic lubricator is dependent upon steam condensate for its operation in displacing oil into the line. With the high degree of superheat obtained with the regular integral superheater boiler it is doubtful if the condenser chamber of any oil field hydrostatic lubricator has sufficient condensing capacity to provide proper lubrication to the machinery. The quantity of lubricant required for proper lubrication with superheated steam is not necessarily greater than that required for dry saturated steam; however, the regularity and distribution of the lubricant is of more pronounced importance. The hydrostatic lubricator commonly used, if properly operated, could be made to provide suitable lubrication with superheated steam; however, the present designs now in use do not readily lend themselves to this service and it is doubtful if they can be relied upon since their proper operation depends too greatly upon the human element. As long as the hydrostatic head in the water chamber is greater than the combined head of water and oil in the other chamber it will force the oil into the steam line. If condensate is formed in proportion to the quantity of oil fed into the line as is the case with saturated steam, the lubricator continues to function until all of the oil is displaced. With high temperature superheated steam condensate does not form sufficiently fast to maintain the hydrostatic head in the water chamber; therefore, it soon drops to a level where the heads in the two chambers are equal and a state of equilibrium occurs and no lubricant is displaced. The quantity of lubricant displaced before equilibrium is reached is small and if the lubricator is not repeatedly filled with both water and oil the pistons and valves are soon operating dry. If the water chamber was sufficiently large above the equilibrium level it would displace all of the lubricant and therefore run for a much longer period of time and would not require such constant filling to keep it operating. It would, however, have to be filled with both water and oil.

Until this improvement is made in the design of this type lubricator it can be said that the operation of the hydrostatic lubricator is deceiving and not readily suited for use with superheated steam. The hydrostatic lubricator has another disadvantage compared to the force feed type in that it does not supply a varying quantity of lubricant in proportion to the speed of the equipment and unless turned off continues to feed lubricant into the line when the machinery is not running.

Generally when hydrostatic lubricators are used they are installed in the line near the boilers in order to lubricate the feed water pumps. This arrangement is not as satisfactory with superheated steam as with saturated steam on account of the absence of moisture and therefore the oil will not be carried as easily or distributed as evenly. Likewise, if low temperature lubricant is temporarily resorted to this lubricant has sufficient time to be destroyed before it reaches the rig, while the same lubricant placed directly into the valves and cylinders would perhaps perform its duty before being completely destroyed.

Force feed lubricators have been greatly improved in the past few years. They afford the best way to measure evenly and distribute the lubricant to the wearing surfaces and are better fitted for use with superheated steam. The major difficulty with the old style force feed lubricator was that it was not sufficiently rugged and was somewhat complicated to keep operating properly; also, the reservoir capacity and opening for filling were, and in several cases still are, too small. Some operators have built funnel-shaped reservoir attachments to alleviate this trouble. In many cases the force feed lubricators were so installed that they could not pump sufficient oil for proper lubrication.

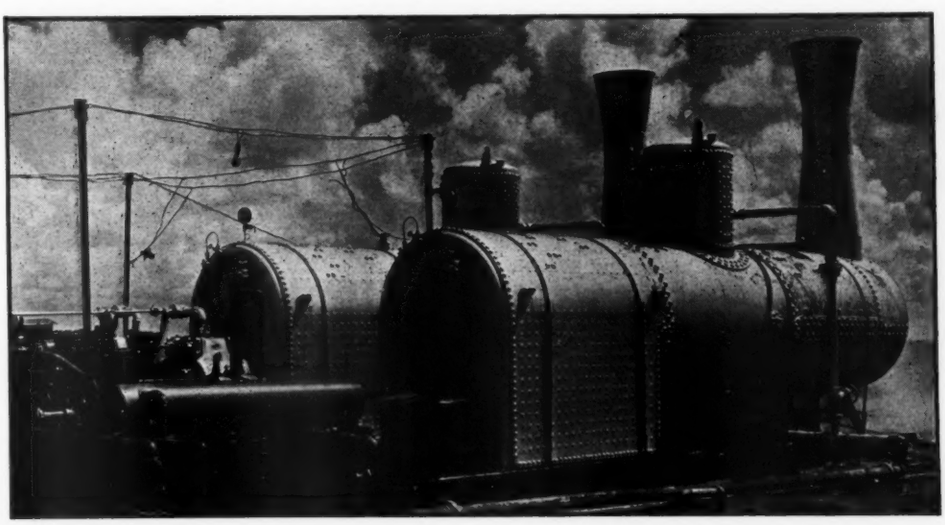
Integral Superheater Boiler

Most operators are familiar with the design of the integral superheater boiler; however, to determine the cause and magnitude of the difficulties encountered with it in service it is well that certain features of its design be discussed.

The flue arrangement of the superheater boiler consists of twenty 4½-inch flues together with approximately ninety 2¼-inch flues, depending upon the individual design of the manufacturer. In all makes of these boilers the larger flues are identical in arrangement so that the superheater proper, which is manufactured by the Superheater Company, is interchangeable. The small flues are arranged in vertical rows below and around the large flues as the space permits. The superheater elements extend into the large flues from a cast steel header in the smoke box. The header is divided into two chambers so that incoming saturated steam from the dome of the boiler enters one chamber, passes through the elements in the flues where it is superheated, back into the other chamber and to the steam line.

The distance from the flue sheet in the firebox to the inner end of the element, is the principal factor in determining the degree of superheat since the flue gases which superheat the steam are at a high temperature near the firebox, and comparatively low temperature at the smoke box. Manufacturers now have available four lengths of superheater elements to give different degrees of superheat as desired.

Practically all superheater boilers have been made with slightly less cross-sectional draft area than correspondingly saturated boilers. This, together with a lower stack-gas temperature due to the superheater, caused the boilers to be harder to fire with natural draft; however, with induced draft this difference in firing ease is not so noticeable. As new superheater boilers are built they can be provided with as great a draft area as saturated



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boilers, since this condition is not necessarily inherent to the design of the superheater boiler.

Another feature pertaining to the flue arrangement in the superheater boiler, which in certain localities in the past has been responsible for considerable trouble and expense to the operator, is the difficulty in properly cleaning the boiler when water conditions are bad. This is due to the fact that the large flues are arranged in staggered rows above the small flues and prevent access to the vertical passageways between the small flues such that scale can not be readily cleaned from around the small flues. Scale cleaned from the large flues falls onto the small flues and restricts circulation and as a result the flues are occasionally burned and have to be replaced. As it is practically impossible to replace a few burned tubes without removing all flues, this involves considerable time and expense. Recent developments in water treating devices have alleviated this trouble in certain localities and when new designs of superheater boilers are developed it can very easily be eliminated by rearranging the spacing of the large flues.

The one essential feature in a superheater of any type is that if the elements are subjected to high temperature a sufficient quantity of steam must continually pass through the superheater to keep the temperature of the metal below the point where it will stretch or flow under the internal pressure. In several cases this was not fully realized and as a result many elements were burned by improper handling or unthoughtful connections. Often saturated steam was taken from the boilers to run auxiliary equipment such as feed water pumps, generators, oil burners, or occasionally lease pumps. With this condition existing it was often necessary, as with any rig, that the equipment using superheated steam be shut down and only the equipment using saturated steam be in operation. Since no steam was passing through the superheater to protect it and fire was being applied to furnish saturated steam for the auxiliaries and maintain the steam pressure, the elements became sufficiently hot to be blown out and destroyed. Had all equipment using steam been supplied with superheated steam from the main header there would have been sufficient cooling of the elements to prevent their being damaged, since the heat of combustion, with the exception of that required to offset radiation, would be in proportion to the steam passing through the superheater. In certain cases where the operator desires to use saturated steam for the auxiliaries a bleeder line is used on the superheater. This line, connected into the main steam header, is arranged so that the fireman can open it when the equipment using superheated steam is shut down and thus provide some passage of steam through the superheater. This arrangement which involves the human element, is not as desirable from the standpoint of protecting the superheater as insuring that all steam passes through it.

Some trouble has been had with burned elements where the power demand exceeded the steam generating capacity of the boilers. In this case when the steam pressure is pulled down by the pumps and engine, it is necessary to shut them down frequently and build up the steam pressure. In doing this the passage of steam through the header is shut off and the fire forced to its peak, and consequently the elements are burned. It is highly probable that superheaters have been damaged while being fired up, because of no steam passing through the elements.

In summing up the above it can truthfully be said that the difficulties due to the design of the superheater boiler have been well thrashed out and are not so detrimental today as they were a few years ago even though the design has not been essentially changed, also, since most of the undesirable features have been determined, and are not inherent, it is possible to now build a more suitable superheater boiler.

Separate Unit

Certain manufacturers, recognizing the difficulties being encountered with integral superheater boilers and also the possibility of making equipment which could be used with saturated boilers to increase the effectiveness of the steam, introduced the separately-fired superheater. While this type superheater is not made in a size that will produce as high a degree of superheat and consequently effect as much savings with large quanties of steam as that obtainable with integral superheaters, it affords the operator a means of controlling the degree of superheat. Principally on account of this feature, and because of the fact that it can be added to a battery of saturated boilers to increase the effectiveness of the steam, the separately-fired superheater has met with some degree of success even though its weight and cost per unit of capacity compared with the integral superheater has necessarily been high; also, the unit will not stand the abuse of handling as well as the integral heater and requires special controls, additional piping, and increases the duties of the fireman.

It has been found good practice to insure that all steam, including that used by auxiliary equipment, passes through the heater the same as with the integral superheater since it is possible for the refractory walls to retain sufficient heat, after the fire is out, to burn the elements if the steam flow is entirely shut off. The separately-fired superheater serves most efficiently when placed near the boiler since the line losses are appreciably less with superheated steam.

Recent Improvements

During the depression years there were but few noticeable changes made in the design of oil country boilers; however, during this period considerable study was given to boiler design, and as a result we have recently entered into a period of advanced design which should ultimately lead to much improvement in the oil field steam generating plant. Manufacturers have been hindered in the past by the belief that if they made certain changes in design to improve their products these changes would not readily be accepted by the operators; however, now that economy and time are of greater importance in drilling operations improvements are forthcoming and are being accepted more readily.

While no recent changes have been made in the design of superheater boilers, several improvements have been made in the design of saturated boilers. Most of these improvements are of a nature that they can be incorporated into the design of superheater boilers if they prove desirable.

In looking over the past year or so we find that welding has begun to play a larger part in the manufacture of boilers, and while an all-welded boiler is not available at this time, principally because the manufacturing cost is prohibitive, certain improvements have been made by welding. Most manufacturers have generally adopted the practice of seal-welding various troublesome seams about the boiler. The seams between the firebox plates and the mud ring are now seal-welded in most boilers; also, the firebox ends of the flues are seal-welded to the flue sheet, and various seams about the dome and barrel are in many cases seal-welded on either the inside or outside. Indications at this time are that seal-welding, if properly applied, is of considerable benefit in eliminating troublesome leaks seemingly inherent with riveted construction under oil field conditions.

At least one make boiler is now provided with a welded firebox which includes essentially the welding rather than riveting of the two end sheets of the firebox to the crown and sides sheet. The principal advantages pointed out for this construction are the elimination of overlapping of sheets with a small reduction in weight and slight increase in heat transfer; likewise, rivets and leaks are eliminated.

Another make boiler is now available with a welded barrel, that is, all seams on the barrel other than that connecting the barrel with the firebox are welded. This construction affords a barrel of uniform diameter which it is claimed results in more uniform barrel stresses. The main advantage pointed out, however, is the elimination of troublesome leaks together with a small reduction in weight. The A.S.M.E.

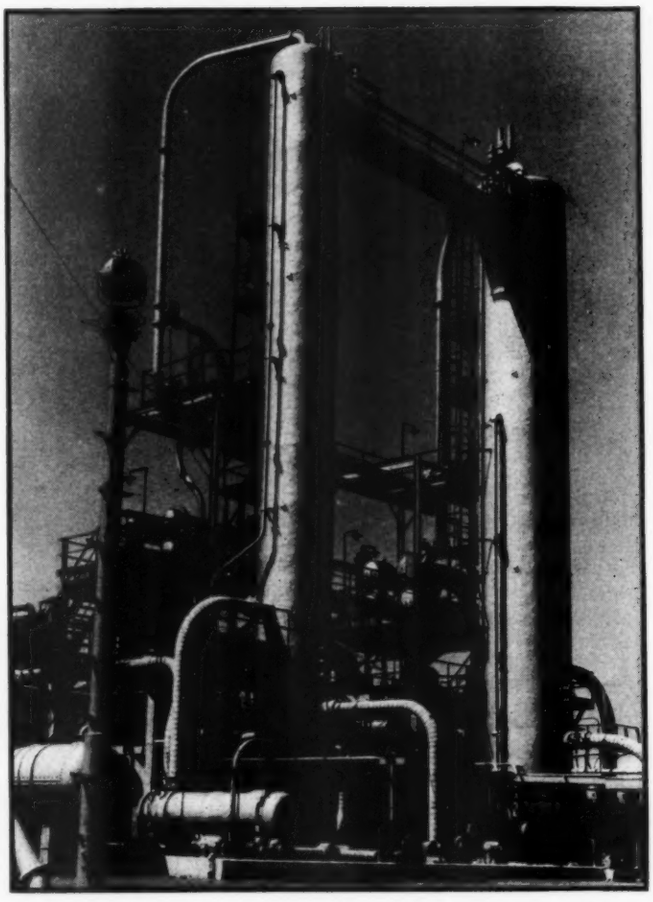
One type of modern steam drilling rig

boiler code, which has been adopted as part of the A.P.I. boiler specifications,* requires that seam welding, such as this, located in an unstayed area, must be radiographed and stress relieved, and the section involved be tested to twice the working pressure. Welding such as that in the welded firebox is permissible under the code without this, since it is in a staybolted region where the bolts support the load. These requirements, and particularly that of stress relieving, are the principal reasons why it would not be economical to now make an all-welded boiler. A furnace capable of heating only one boiler at a time would in most territories be expensive from the standpoint of fuel and would appreciably increase the manufacturing cost of the boiler; and a furnace capable of heating several boilers at a time is not available and would require a large investment, which would likewise increase the manufacturing cost. Manufacturers feel that the advantages gained in an all-welded boiler would not offset the increased manufacturing cost at this time.

During the past year or so steps have been made in increasing the size of the firebox of larger boilers from 84 inches in length to 96 inches; however, to date most boilers built with this size firebox have been shipped for foreign service. It is apparent, and has been shown by test, as pointed out by V. Weaver Smith,[2] that firebox heating surface which is subjected principally to radiant heat is far more effective in generating steam than is the heating surface of the flues which is essentially dependent upon convection heat. These tests showed that the ratio of steam generating capacity of firebox heating surface is in the neighborhood of 100 to 1 greater than the heating surface at the fourteenth foot of flues. Likewise, these tests showed that the firebox heating surface which is only some 11 per cent of the total heating surface of the boiler, generates from 75 to 85 per cent of the total amount of steam when the boiler is operating at 200 per cent rating, also, that 47 per cent of the total weight, which is the portion represented by the flues, only generates from 15 to 25 per cent of the steam.

While it is quite definite that an increase in firebox size will appreciably increase the steaming capacity of the boiler, it does not show up as much of an increase in boiler rating when classified by the 10 square feet of heating surface per horsepower method of the A.P.I. Standards No. 2. When classified by this method an increase of 1 foot in the length of the flues shows up as four to five times as great an increase in boiler rating as does this increase of 1 foot in the length of the firebox. According to the ratio mentioned above it is evident that if the additional foot of flues is the fourteenth foot from the firebox the additional heating surface obtained by an increase of 1 foot of firebox length would be nearly 20 times as great from the standpoint of steam generating capacity as the four to five times greater amount of heating surface obtained by the addition of 1 foot to the flue length.

It is well, perhaps to emphasize that if the fire and draft are increased sufficiently so that the flue gases near the smoke box are at a high temperature the steaming capacity of the outer portion of the flues will be greater and an increase in the flue length be more beneficial. The railroad locomotive boiler is a good example of this condition.



Light naphtha fractionation equipment in the Bayway refinery of the Standard Oil Co. of New Jersey

In several cases manufacturers have felt that reducing the flue length of their boiler would be beneficial to both them and the operators. In doing this, while they might under certain conditions reduce the efficiency of the boiler a slight amount, the draft would be increased and firing conditions be improved such that the rate of steaming would be higher; also, an appreciable reduction could be effected in the manufacturing cost, and in the weight, which would facilitate handling and reduce shipping costs. However, since many operators rely on the A.P.I. rating classification of 10 square feet of heating surface equals 1 horsepower, in making purchases, manufacturers hesitate to make this move on account of the unfair rating the shorter flue boiler would receive.

The present method of rating oil field boilers gives a nominal rating intended only for the purpose of classification, and it is confusing to many operators who use it for comparing different makes and sizes of boilers and for comparing the power capacity of various steam rigs with the power capacity of rigs having other types of prime movers, which is improper. There are factors other than the amount of heating surface which govern the steam generating capacity of a boiler and there is no definite relationship between boiler horsepower and horsepower expressed in terms of foot-pounds of work per unit of time. Even if boiler horsepower and horsepower expressed in terms of work, were comparable it would not be proper to make the latter comparison because most other prime movers for drilling service are rated near their maximum power output, while the present method of rating a boiler rates it at only one-third to one-half of its average normal capacity.

With advent of higher rated working pressures, manufacturers changed the design of the dome from the old flanged shell arrangement to a heavy separately-flanged dome collar. While this added another riveted seam to the boiler it provided much stronger construction. In several cases the position of the steam nozzle has been changed to the stack side of the dome and fitted with a dry pipe. This has been found desirable by some operators because it simplifies the steam header, makes the valve more accessible, reduces overall height, which is important if the boiler is to be housed, and on account of the dry pipe possibly improves the quality of the steam.

A design feature that has been subject to much controversy and has now come to the front is the question of whether or not the dome should be eliminated from the boiler. At least one manufacturer has now made available to the trade a domeless boiler. Several manufacturers have felt for some time that the dome was unnecessary on the boiler, but like the question of flue length, have been hesitant toward eliminating it for fear it would not be favorable with the operators. While there have been no tests of this feature to date under oil field conditions, it is generally believed by some that it will result in a worthwhile improvement to the boiler. In looking at this problem it seems that the dome has several disadvantages; it radiates heat from the steam and is consequently somewhat of a condenser, its elimination would reduce the weight of the boiler some 2,000 pounds, it is difficult to fabricate, has been troublesome from the standpoint of leaks, and in the case of mating different make boilers its location has often been worrisome to the operator. On the other hand the only thing that might be classed as an advantage is the possibility that it affords drier steam and reduces priming. While the magnitude of this advantage can only be determined by actual test, indications from scattered sources are that no trouble will be experienced by leaving it off the boiler.

The width of the water legs of most boilers has been increased to 4 inches because it is felt that a wider leg improves staybolting, is easier to clean, and affords better water circulation to the back of the firebox.

Considerable improvement has been made in most boilers in the refinement of details such as door, and bonnet and stack construction, the padding or flanging of major screwed openings, the baffling of water inlets and the standardization of certain openings and fittings. In general, boilers are not being built today in strict accordance with the A.P.I. code; however, the manufacturers are perhaps justified in deviating from the code since it has not been kept abreast with improvements in boiler design.

In regard to the development of auxiliary equipment we find that improvements have been made such that some of these accessories are now more useful and desirable to the operator.

Water treating is now being given more consideration since in many territories it has shown to be economical compared to boiler upkeep without it. In certain localities a newly developed portable zeolite process water treater is now quite popular. While this sodium-aluminum-silicate process of water treating is perhaps as old as the oil

*A.P.I. Stds. No. 2: Specifications for Oil Field Boilers; American Petroleum Institute, Dallas, Tex.

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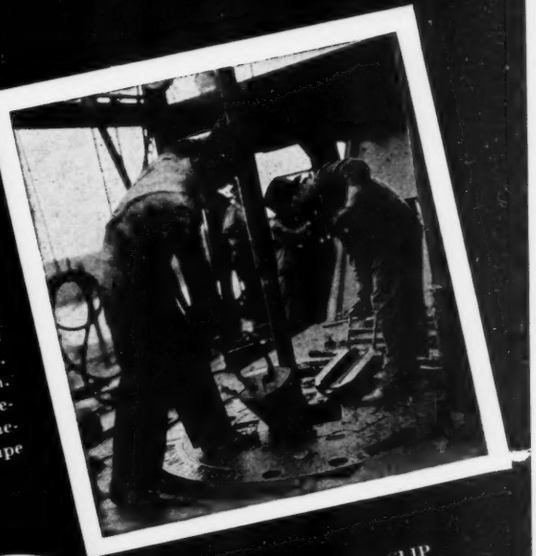

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industry, it has only recently been developed into a unit serviceable to the drilling operator. In other regions where it has been found that the zeolite treater would not be suitable, improvements have been made in the adaptation of other treating processes such that in the future we can expect treating units for practically any water that will warrant treating, other than salt water which requires distillation or complex treatment. In line with this it might be well to point out that improvements are being made in the development of portable-type condensers. As these units are developed into practical devices, the cost coincident with water treating can be greatly reduced since it will only be necessary to treat the quantity of make-up water; also, the adaptation of such devices as the deconcentrator, which is a unit for removing precipitate from treated boiler water, will reduce treating costs by reducing the treatment required and by practically eliminating the frequent blowdown which is now a direct loss.

Feed Water Heater

Feed water heaters have now developed to a stage where they are considered to be regular equipment with the steam rig. There are two general types of these in common use; the high-pressure closed type which generally consists of a high-pressure water coil inserted in a chamber through which exhaust steam is passed, and the low-pressure open type which consists essentially of a mixing chamber in which water and low-pressure exhaust steam are in direct contact. From the standpoint of economy and efficiency, the open-type heater is generally conceded to be the better since scale does not affect the heat transfer and it does not have the line loss coincident with the coil-type heater; likewise, most of the exhaust steam entering the open-type heater is salvaged as distilled water and returned to the boiler. In some cases, so-called economizers or coil-type water heaters have been installed in the smoke box of the boilers. While this type of heater is quite cheap in first cost, it has undesirable features similar to the exhaust steam coil-type heater; also, it restricts the flue gas passageway, reduces draft since it removes heat from the stack gases, and makes the cleaning of the boiler more difficult.

Stack blowers, and in particular, automatically controlled blowers, are now in more general use throughout the oil country. It might be well to point out that the one thing most needed, and in many cases most neglected in the oil field boiler plant, is draft. The steam generating capacity of an oil country boiler depends as much upon draft as any other one thing. It has been shown by test[2] that a boiler will deliver from 150 to 175 per cent of its rating with natural draft provided by a stack comparable with the A.P.I. stack, and that by sufficiently increasing the draft the boiler can readily be made to deliver over 300 per cent of its rating. An A.P.I. length stack will provide only in the neighborhood of one-half inch of draft, while the average economical blower will produce from 1 to 1½ inches of draft. While some operators feel that blowing a boiler is detrimental to it and that 300 per cent rating is too high at which to operate, we might point out that locomotive boilers are in many cases operated at over 500 per cent of rating and in doing this the draft is increased to approximately 10 inches vacuum. To obtain this high draft vacuum, some 80 to 90 per cent of the exhaust steam from the engine is exhausted through the short stack. This might eventually be done in the oil field steam plant by placing the slush pumps near the stack end of the boilers and exhaust them up through short stacks on the boilers.

It is important to remember that when operating at a higher rating, if the water is bad, the boiler will require more frequent cleaning, since scale is formed somewhat in proportion to the rate of evaporation; likewise, care should be exercised to see that the amount of excess air is kept at a minimum since it is detrimental to the efficiency of the boiler. Due to faster circulation, the quantity of scale formed in two boilers is perhaps less than that formed if a similar quantity of water is evaporated in three boilers; however, in the case of the two boilers, the scale would probably form as thick or thicker because of the lesser amount of surface, and require as much cleaning. It is not unreasonable to expect that sometime in the future oil field boilers will be operated at appreciably higher ratings and in this way the number of boilers in the battery be reduced to a minimum. Due to the lack of draft in most oil field boilers today, many short flue boilers, because of their better draft will generate as much steam per hour as longer flue boilers which are larger from the standpoint of rating. While many locomotive boilers have flues from 20 to 30 feet long, the induced draft is sufficient to draw the hot gases through them at a rate that enables the outer portion of the flues to generate a reasonable amount of steam.

The selection and arrangement of burners is being given more consideration by the operators, consequently the efficiency of the burner and rate of steam generation of the boiler have been appreciably improved. The use of multiple-head, relatively low-pressure burners is predominant at this time since this type of burner is more economical in fuel consumption and generally provides more uniform heating of the firebox. It is now common practice to shut out excess air from the firebox by the installation of steel plates between the burner and the walls of the firebox. This arrangement insures that the secondary air passes around the burners to keep them cool and that it is used in combustion or at least heated before entering the flues. An installation feature, which is often neglected and as a result causes unnecessary loss in steam generation, particularly when burner plates are not provided, is the proper banking of the firebox. Since draft is effective at the firebox flue sheet, cold air will enter the flues from under the throat sheet mud ring, if it is not banked off. Air entering in this manner passes into the lower portion of the flues and is detrimental from the standpoint of efficiency. A portion of the sides of the firebox from the throat sheet should likewise be banked to insure that air does not enter the flues without passing around the burners. The highest temperature of an oil flame from a jet-type burner is at a point some 15 feet or more from the burner, consequently it is better to use the type of duck's nest that will afford the longest travel to the flame as better combustion can be obtained and the oil be burned before entering the flues.

Improvements in boiler insulation have made it economically possible to reduce radiation losses which in some territories and during inclement weather in any territory appreciably affect the efficiency of the boiler. The development of the removable type insulation has greatly facilitated the use of insulation on boilers which are frequently moved.

Considerable attention has been given to the development of various types of low water alarms. Due to this and to the fact that most boiler inspectors and insurance companies recommend the use of some safety device of this nature they are now quite generally used. In many cases they are used in preference to soft plugs, particularly with higher pressure boilers.

Conclusion

Taking into consideration all factors, we find that there has been a definite trend of improvement in the oil field steam generating plant over the past few years; however, it is evident that there are still several problems to be dealt with in the future. The problem of draft is of vital importance and should be overcome so that the size and number of boilers required for a drilling rig can be kept at a minimum. In many places boilers are operated at too low a percentage of their actual capacity for overall economic operation, principally because of inefficient burners and lack of draft. This is a problem belonging mostly to the operator; however, manufacturers are striving to improve such conditions and promote better understanding of their importance.

The problem of boiler rating should be given more consideration since in certain cases it has been somewhat responsible for retarding improvements in boiler design and in this way perhaps has been quite costly to the industry. There is undoubtedly more unnecessary weight being carried around in the average boiler than in any other one unit of the drilling rig. In many cases operators are paying a premium for high A.P.I. rating and getting nothing but weight in return.

Superheated steam has been found by test to have several advantages over saturated steam; however, its development, with perhaps exception of the separately-fired superheater, is practically at a standstill because of a few difficulties, most of which are not at all inherent with it.

While the problem of lubrication has been greatly improved upon in the past few years, it has still not reached the stage of perfection. The force feed lubricators of today are still not considered to be entirely reliable and trouble-free for oil field service, and the hydrostatic lubricator does not supply a varying quantity of lubricant in proportion to the need and is not entirely suitable for use with superheated steam.

The matter of developing a suitable portable-type condenser is being worked on by certain operators at this time with some success. The problem, however, is worthy of more consideration since the development of this device would eliminate several of the undesirable features of the steam rig.

Acknowledgment

Acknowledgement is made to the various engineers and manufacturers who assisted in the preparation of this paper.

1. Oil Field Boiler Tests, by Hu M. Harris and J. E. Eckel, Humble Oil & Refining Co. Presented at First Mid-Year Meeting A.P.I., Dallas, 1931.
2. Modern Steam Drilling Equipment, by V. Weaver Smith, vice president, The Broderick Co. Presented at Semiannual Meeting A.S.M.E., Dallas, June, 1936.

Geophysical Prospecting

American Askania Corp. has just published, under an agreement with the Bureau of Mines, a "Manual on Geophysical Prospecting With the Magnetometer," by Dr. J. Wallace Joyce, which will prove of much interest to those interested in geophysics. This manual is one of a series being prepared by the Bureau of Mines to describe the theory, instruments, field technique and some of the fundamental principles underlying the interpretation of various methods of geophysical prospecting.

Magnetic prospecting methods may be applied advantageously to many field problems where recognizable magnetic horizons or bodies occur, furnishing rapid results of a reconnaissance or detailed nature, and wherever complex conditions are encountered, can be checked by other geophysical methods. The manual can be secured from American Askania Corp., Houston, Tex. ($1.50).

A bulletin describing an improved gas burner for firing oil field burners is available from Natural Gas Equipment Co. of Texas, 511 Sterling Building, Houston, Tex.

Foundations Used in Marsh Operations

By W. F. HERBERT and H. E. ANDERSON
The Texas Company

The extension of oil field activities into the marshy areas along the Louisiana and Texas Gulf Coast has brought a new and vital problem to the operator's mind, that of designing adequate and economical foundations for supporting drilling and production equipment. The purpose of this paper is to discuss the conditions encountered in this area, and the means now being used to meet these conditions.

The term "foundations" may be defined as any type of material or structure used as the supporting medium for operating equipment. A foundation is that man-made structure used to distribute the imposed load of the equipment and vertical operating forces over the natural supporting effect of the marsh.

Marshes may be classified in three groups: (1) Semimarsh—soft land with grass coverage, subject to frequent overflows by high tides or overflowing streams, soil loading limited to 1,000 pounds per square foot; (2) wet marsh, soft oozy silt, generally covered by high grasses, under water, incapable of supporting man, soil loading limited to 500 pounds per square foot; (3) open water, shallow depth limits the possible use of marine equipment, soil loading limited to 250 pounds per square foot.

Types of Foundations

Three types of foundations may be considered in the selection of the proper type for marsh operations:

1. Earthen fill.
2. Wooden mats and superstructures.
3. Piling.

Certain characteristics of marshes are valuable in their supporting effects, and are generally considered in the foundation design. The grass and grass roots covering most marshes are of particular value, as they afford a means of holding the loosely packed silt in place under the mat. For this reason practice dictates that neither the grass nor the grass roots be removed from the location where a mat is to be used; instead, the grass is bent over and the mat laid on top. The second characteristic of value is the freezing effect of loose silt upon piling, particularly in those locations where hard-pan is an appreciable distance below the surface. It has been found that piling which will drive with a minimum drop of the hammer, is capable of supporting an appreciable load after standing for 24 hours. By this means it has been possible to keep the length of piling within the limits of supply and at a reasonable cost, whereas to have used piling long enough to reach hard-pan would have been prohibitive or impossible.

Before moving into a location in a marsh some investigation should include a study of surface conditions; a physical test to determine the bearing capacity of the soil; core-drilling to determine the depth to hard-pan or firm load-bearing formation; and a knowledge of the maximum loads to be supported, and whether static or kinetic loading. The value of such an investigation is more than a matter of possible saving in construction costs. An accurate knowledge of the supporting effect of the marsh provides a basis for the design and construction of a foundation capable of withstanding operating loads. Structural failures are to be avoided, not only because of the loss of time or well or equipment, but because of possible blowouts and subsequent damages. The effect of damages upon the shrimp, oyster, fish and fur industries by a blowout on a marsh or water location would probably lead to drastic legislative action, which would likely entail such stringent regulations that the cost of marsh drilling operations would be prohibitive.

***A.P.I.*—Presented before the Southwestern District Production Division at Dallas April 1 and 2**

The selection of which of the three types of foundations to use is dependent upon the consideration of several factors:

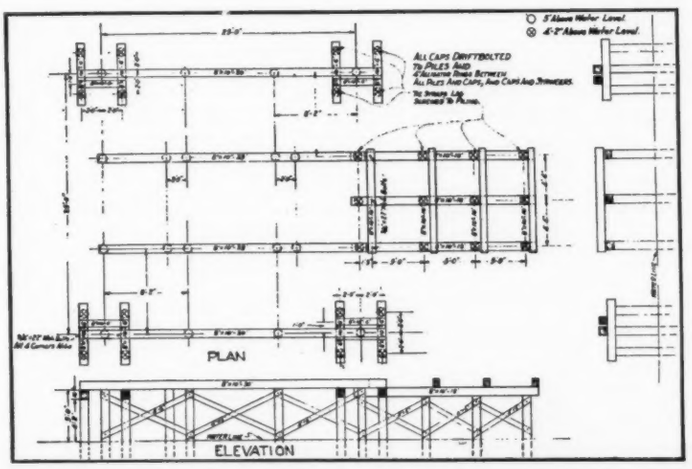
(1) Initial cost; (2) salvage value; (3) maintenance costs; (4) ability to meet most field operating conditions; (5) adaptability to drilling operations—total head room, clearances, working spaces, freedom from vibrations, etc.; (6) strength to withstand temporary overloads; (7) permanence—possible use with future production or workover operations; (8) installation—difficulties to be experienced relative to time factor, source of materials, and special equipment.

1. Earthenfill

The earthen fill is made by transporting solid materials, such as stone, shells, gravel, sand or clay, to the location and dumping upon the site. The material gradually packs until it is capable of withstanding an appreciable load. This type of foundation is used principally for soft marshy locations, where the fill gradually displaces the silt, and builds a firm footing from hard-pan to the surface. Its use is somewhat limited due to the cost of handling and transporting a comparatively large quantity of material under difficult conditions. Examples of this type of foundation are common on railroad and highway marsh crossings. The Freeport Sulphur Co. was successful in constructing large earthen reservoirs by this method at Grande Ecaille, La.

2. Wooden Mats and Superstructures

The design of a mat foundation is dependent upon securing sufficient coverage by the mat so that the unit load on the mat is within the limits of the soil bearing capacity of the marsh. The mat is that system of wooden timbers covering the loaded area upon which the superstructure rests. The superstructure is that system of timbers, laid as cribbing or fabricated in some structural form, required to distribute the concentrated loads of the equipment uniformly over the mat. In the case of a drilling rig the superstructure distributes the derrick leg, rotary support, pipe support, drawworks and drilling engine loads, which are concentrated at the base of the superstructure, over the necessary mat areas. Figure 1 illustrates a design of mat foundation for drilling rigs.



Piling and capping foundation plan for substructure and engine foundation

The authors' experience with mats covers the three following methods of construction:

1. Single-board Mats—These mats are made up of timbers laid edge-to-edge; this method was found objectionable because of the large size and cost of the timbers required in its construction.

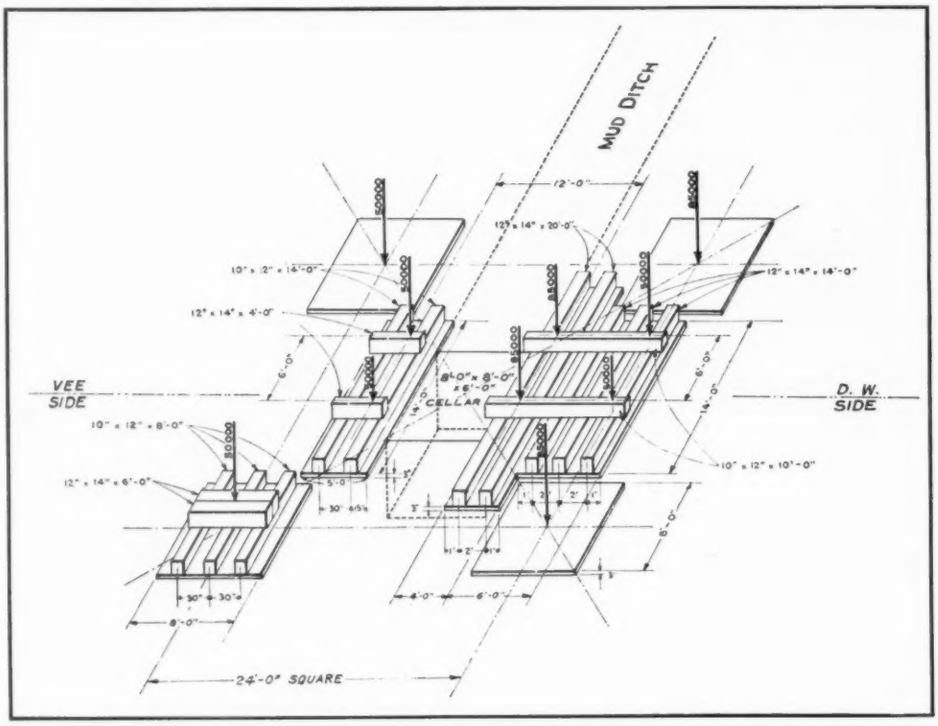
2. Double-board Mats—These mats are made up of relatively thin planks, laid edge-to-edge in the same manner as the single-board mat, but using two courses of thin planks instead of one course of heavy timbers.

This method overcame the cost objection, but developed mechanical trouble when loaded, due to slippage between the two layers, caused by the lubricating effect of the water and silt.

3. Criss-cross Mats—These mats are made up of two courses of planks laid at right angles to each other, the planks in each course being spaced 4 inches apart when using 3 by 8-inch planks, and 6 inches apart when using 3 by 10-inch planks. The two courses are toenailed to assure rigidity under load. This type of mat can be made up at considerably lower cost than the single or double mats, and, to the authors' knowledge, the performance has been satisfactory. Upon loading, this type of mat settles slowly, the grass and silt rising and filling the open spaces, thus locking the mat firmly in position.

The material generally used for criss-cross mat construction is either 3 by 8-inch or 3 by 10-inch No. 2 Southern Pine Timber, untreated. Untreated lumber is used as the timber is generally below the surface of the water where it is not affected by wet-rot or marine borers.

The superstructure has, until recently, been a system of cribbing consisting of from two to four courses necessary for load distribution. Recently in an effort to develop stronger and more economical superstructures the use of bents and trusses have been incorporated in the design of the substructure. These fabricated structures have shown decided lower costs, ease in handling, and greater rigidity during drilling operations. However, the designs are still in the way of development and subject to numerous improvements. Further comment will be given this matter later in the paper.



Design of mat foundation for drilling rig. Maximum loading—setting 7,000 feet 7-inch O.D. casing—soil bearing capacity is 1,500 pounds per square foot

The use of the mat foundation is applicable to semimarsh, wet marsh, and in certain cases, open water locations. It has the advantage that the source of material is not limited, is reasonable in cost where the bearing capacity of the soil does not require excessive areas of coverage, and requires no special equipment for construction. The salvage value is high, and, with the exception of the mat, is recoverable at a reasonable expense. The mat, because it is built to withstand the maximum drilling loads, and under these loads takes its permanent set, is readily adaptable for foundations of subsequent production and workover equipment. For most marsh operations the wooden mat and its superstructure are generally given first consideration.

Certain limitations are experienced in the use of mat foundations. Due to the unhomogeneousness of the marsh the bearing capacity of the soil varies even under the area covered by a mat. In certain cases this condition is reflected by uneven settling of the mat, requiring frequent shimming. In others it throws undue stresses in the superstructure. It is this condition which prompts the authors' recommendation of the development of special marsh type substructures with members capable of transferring loads to equalize these varying supporting effects. In the case of tank batteries set on mats, it has been found necessary to install swings in all tank connections to prevent line breakage due to uneven settling of individual tanks.

3. Piling

Piling foundations for marsh operations are usually the matter of last recourse, where fill and mat foundations have been found to be excessive in cost or unsatisfactory under service conditions. Piling foundations are generally used in wet-marsh or open-water marshes. Figure 6 illustrates a piling foundation plan.

A piling foundation is made up of a series of piles driven in a design conforming to their loading patterns. Piling may be driven to hard-pan or clay where their capacity may be determined by formula, or they may be driven to some predetermined depth by light blows of the drop hammer where they are held by the freezing effect of silt on piling. In the latter case a series of loading tests will be required to determine the capacity of the individual pile. Upon being driven to depth the tops of the piling are cut off to grade and capped with structural members forming the first course of the superstructure upon which the operating equipment rests.

The use of piling involves a special source of materials and special equipment for driving. Its cost is high, although on a basis of the bearing capacity of the soil the cost compares favorably to that of a mat foundation. With creosoted timbers the life is long, showing negligible maintenance costs. The salvage value is problematical, depending upon the length of piling, the depth driven and the cost of salvaging. However, the piling and caps provide a foundation for future production and workover operations. At the present, this type of foundation is handicapped by vibration, particularly such as are set by a horizontal reciprocating engine. In a structure where the piling is driven to hard-pan the effect of the horizontal vibration at the end of long cantilever is pronounced. However, it is believed a proper type of bracing will successfully dampen this vibration.

The authors have not included in this paper a discussion of submerged drilling and production barges, as they represent a distinctly special type of foundation. Their particular value lies in operations on water 6 to 10 feet deep, although in some cases canals have been dug through wet marshes to float the equipment to location.

Analysis of Design

One of the most important factors, in the minds of the authors, is the ascertainment, if possible, of the probable bearing value of the soil before designing a foundation. If in a semimarsh or wet marsh, it can be done as follows:

Secure a piece of timber having an area of 1 square foot or two. Place this on the ground and make a pedestal with a flat table on top. Clear the ground under the foot so that no mat action from the grass will falsify the actual ground bearing test. Guy the above table with wire so as to hold it erect but not down. Load this table with weights of known quantity, such as sacks of cement or mud weighing materials, which weigh approximately 100 pounds each. Measure sinking every 24 hours until relative balance has been reached. Then continue loading until failure of soil is reached. By careful judgment between the first test and the final failure a fairly accurate estimate of the soil bearing can be reached.

It is recommended that all companies operating in the Gulf Coast areas, where soil of questionable bearing is involved, make tests of this nature so that a fairly complete record will be available to all operators. The following engineering data and comments are here offered as an aid in the development of standards and new data. This material is not intended for, and should not be construed as, a panacea for structural illness or as a basic truth. Only through the deeper study of soil mechanics, the exercise of sound judgment and common sense, will eventually come better standards and criteria by which the engineer may be guided in this important field of structural design.

Where structures are erected on soil of such a nature that the piles bear on a hard substratum, but have little or no lateral support, their strength as individual columns becomes the determining factor, and in such case the problem of determining their capacity is reduced to one of structural mechanics, the principles of which are well known. In a majority of cases, the bearing power of foundation piles is developed principally by frictional resistance, and there is no exact method whereby such power can be precisely determined. Approximate methods commonly used for the purpose are: (1) Formulae which take into account the energy delivered to the pile by the hammer blow and the penetration of the pile under the final blows, and (2) test loadings. When an engineer is designing

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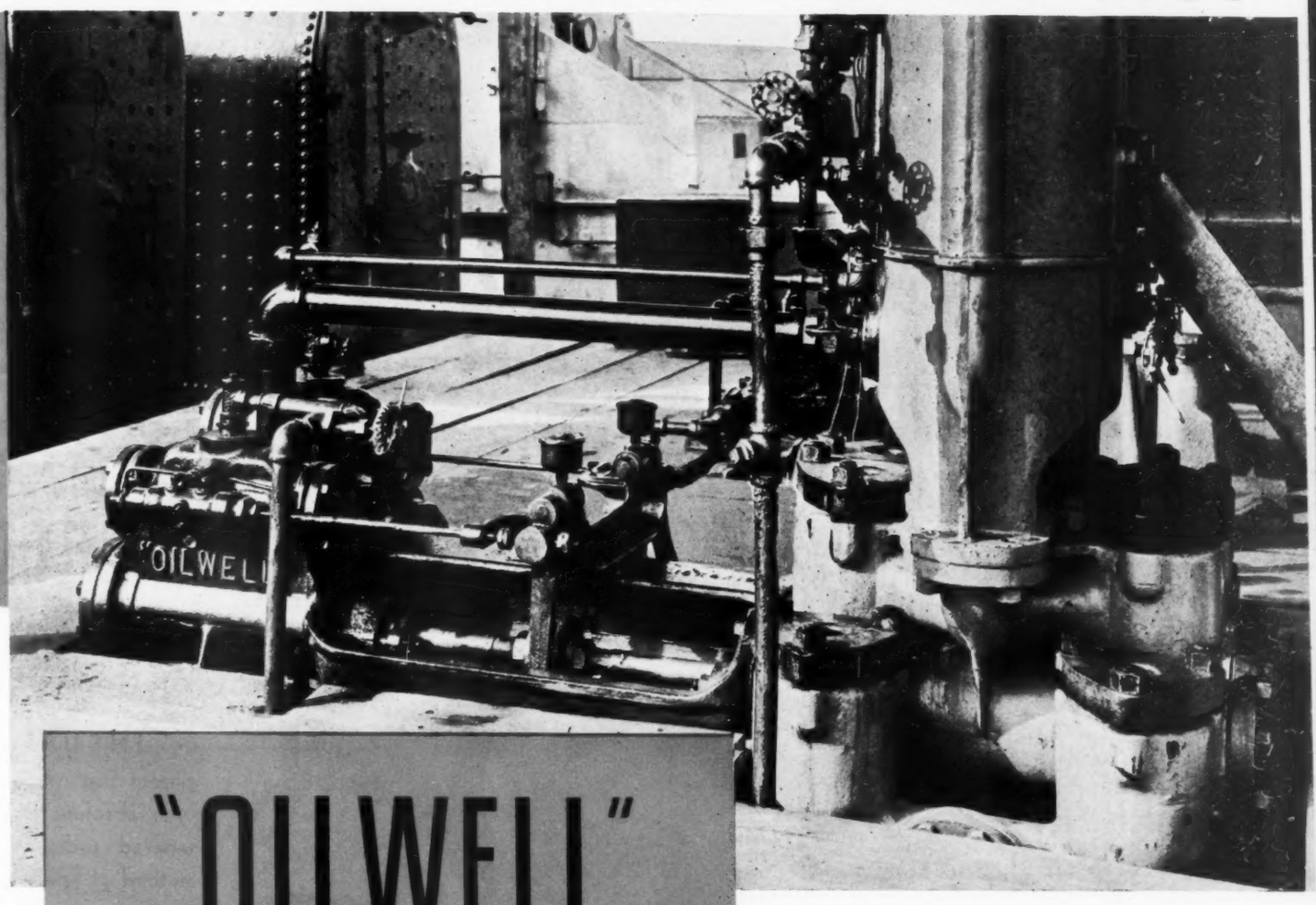

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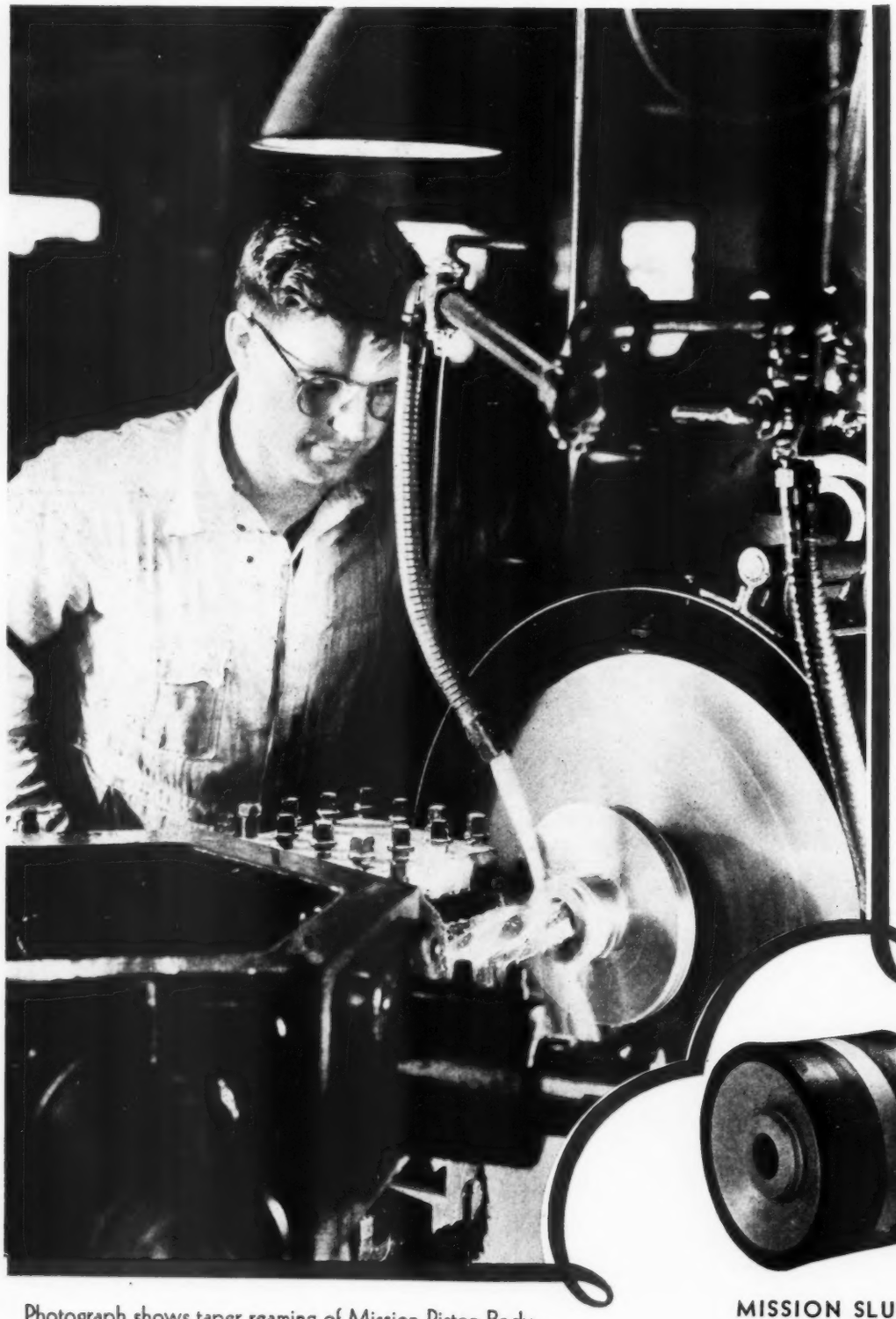
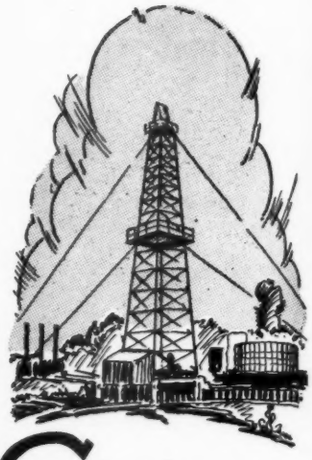


Photograph shows taper reaming of Mission Piston Body



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a foundation, neither one of these methods, unfortunately, is available, unless test piles can be driven prior to making the design. Even in this case it is usually impracticable to investigate the action of piles in groups as they will occur in the structure; therefore, the engineer must be guided either by the action of piles under adjacent buildings in the same soil, under other buildings in similar soil, or by experience and the exercise of good judgment.

It is generally conceded that the bearing power of timber piles driven in soil of uniform character, as computed from formulae in common use, may be regarded as reliable and conservative where a single pile is involved. Committee VII of the American Railway Engineering Association reports with respect to the Engineering News formula and the bearing capacity of wood piles (Bulletin 341, November, 1931) as follows: "This method of determination is supposed to give a factor of safety of 6, and, where the results of the formula have been checked by test loadings, the latter have almost invariably been found to be in excess of the computed safe load. Where uncertainty exists, as it does in a large proportion of cases, as to the material through which the pile is passing, this margin of safety is probably not too great; but where it is positively known that the material is of a uniform character, with no possibility of encountering local obstructions, an increase of the coefficient from 2 to 2½, or even more, might safely be made."

After all, the terms "load capacity" and "bearing power," as applied to friction piles, are misleading, because the true function of piles is to transfer the superimposed load to the surrounding soil, through which it is transferred, in turn, to the lower strata. The capacity of the surrounding soil to accomplish this is reflected in the amount of useful work done on it by the hammer in driving the pile. The question, therefore, is: By what type of pile can maximum energy be transferred to the surrounding earth? Obviously, maximum energy will be transferred through that type of pile which absorbs the least amount of hammer energy required to overcome inertia of the pile due to its weight or mass. Remembering that no further useful work can be done on the soil after the pile medium ceases to penetrate, if two piles are driven to refusal with the same hammer in the same soil, the lighter pile will have transferred the greater energy to the soil, regardless of any special characteristics of either pile.

Foundation piles in practically all cases are driven in clusters or groups. Whatever the assumptions for safe load of the single pile, or calculations from formula or test loadings on the single pile, they are upset when group action of the piles is involved. There is not even any remote reasoning by which it can be established that the character of the pile has any relation to the group action of the cluster, except in the case of piles considered purely as columns. The load capacity of a group of piles depends very largely on the area and bearing value of the substratum over which the total load is distributed, and this depends, in turn, on the penetration and spacing of the individual piles. Thus the practice, occasionally noted, of limiting the total safe load of the group of piles to a certain amount per unit of assumed area of substratum, over which there will be a maximum equivalent of load, is to be regarded as a distinctly progressive step in pile foundation design.

The Bureau of Yards and Docks of the Navy Department recognized the need many years ago of a pile-driving formula which takes into account the ratio of pile and hammer weights, and has used both of the following:

$$(1)\quad L = \frac{2\,W\,h}{S\,(1 + 0.3\,w/W)} \quad \text{....Bureau formula}$$

$$(2)\quad L = \frac{2\,W\,h}{S + w/W} \quad \text{.....Eytelwein formula}$$

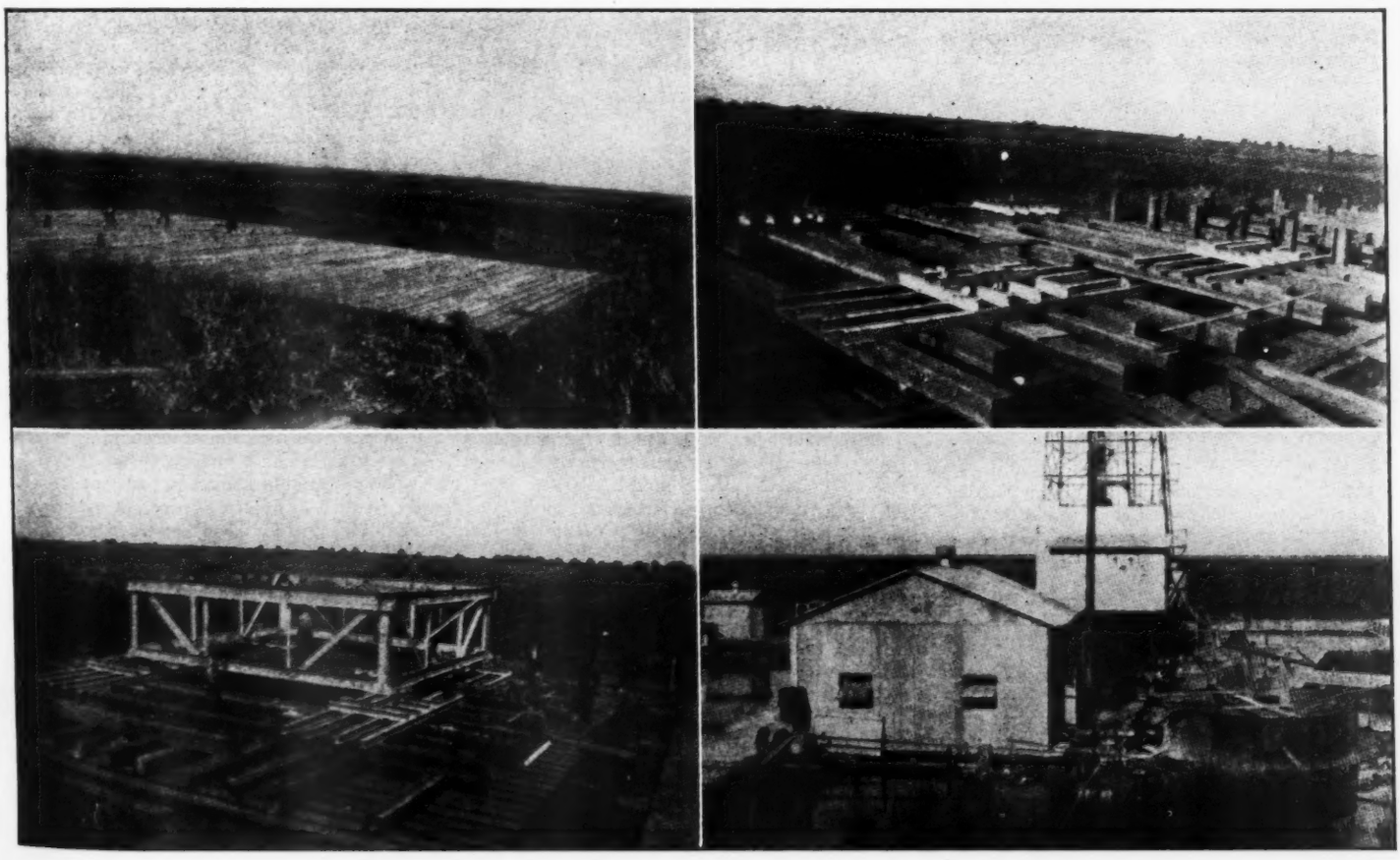
where

L = safe load of pile
h = drop of hammer in feet
W = weight of hammer
w = weight of pile
S = average penetration in inches, from last blows.

The preceding argument clearly indicates that arbitrary values for maximum safe loads for any type of pile are not to be advocated, codes and specifications notwithstanding, but that the character of the soil must be the determining factor. Nevertheless, there is every reason to believe that present practice is inclined to give values much too low for wooden piles, and probably somewhat too high for piles of other kinds, in view of the great uncertainty of the action of the soil when under stress. For friction piles in general, when driven to a certain rate of penetration per blow of a hammer delivering a comparable ratio of energy, there is no valid reason for assuming a greater safe load for one kind of pile than for another. There is no reason for such difference either on the basis of pile-driving formulae, test loadings, or the strength of the pile in compression. And there are no other bases for comparison. Special cases with respect to soil conditions, unusual sizes of piles, or other factors, present other phases of the question, and must be dealt with accordingly.

Foundation Design for Drilling Operations

The following data have been compiled from wells drilled by several companies in scattered areas of the Gulf Coast. The authors do not present these designs in the spirit of criticism, but rather as indicative of the trend in design and as examples of difficulties experienced with special foundations



Stages in mat construction to support drilling rig on marshy land

in actual drilling operations. No doubt numerous examples could be added to this list to illustrate further the need of concerted efforts in attacking this problem.

Example No. 1—Water location, Turtle Bay, Chambers County, Texas

Bottom—varying sand to mud.
Piling used—36-35 feet 10-inch Butt.
Average refusal 25 tons.
Depth of hole 6,650 feet.

The following is the analysis of loads at the time of setting casing:

Corners—
Loads imposed:
6,650 ft.—7⅝-in. csg. at 26 lbs. = 172,900 lbs.
Available strength:
5 pile at 25 tons = ... 250,000 lbs.
4 corners = ... 1,000,000 lbs.

Rotary—
Load imposed:
6,650 ft.—7⅝-in. csg. at 26 lbs. = 172,900 lbs.
One-half drill stem load stacked = ... 50,000 lbs.
222,900 lbs.
Available strength:
4 pile at 25 tons (to take 86,450 lbs.) = ... 200,000 lbs.
4 pile at 25 tons (to take 111,450 lbs.) = ... 200,000 lbs.

Example No. 2—Piling, Foundation, South Morgan City, La. Marsh Location

Depth of hole—10,000 feet.
Piling used—51-60 feet—0-12-inch Butt.
Average refusal 15 tons.

Corners—
Setting 10,000 feet 7⅝-inch casing:
Available strength:
7 pile at 15 tons = ... 210,000 lbs.
4 corners = ... 840,000 lbs.
Load imposed:
10,000 ft.—7⅝-in. csg. at 26 lbs. = 260,000 lbs.

Rotary—
Available strength:
(a) 8 pile take ½ casing and ½ drill stem load = ... 240,000 lbs.
(b) 8 pile take ½ casing load = 240,000 lbs.

Load imposed:
(a) 10,000 ft. 7⅝-in. csg. at 26 lbs. (½) = ... 130,000 lbs.
10,000 ft.—4-in. drill stem (½) = ... 75,000 lbs.
205,000 lbs.
(b) 10,000 ft.—7⅝-in. csg. at 26 lbs. (½) = ... 130,000 lbs.

The following two examples are of rigs that during drilling operations some structural failure resulted:

Example No. 3—Piling Foundation. Location —Mallard Bay, Louisiana

Bottom sandy—depth of water 6 feet 0 inch.
Piling used under derrick 36 35 feet 0 inch.
Average refusal 17½ tons per pile.

The history of this well shows that a 25-inch hole was started and 83 inches of 25-inch conductor pipe was set. It was then drilled to 1,500 feet and 1,500 feet of 18⅝-inch pipe was set and cemented. After that open hole was drilled to 6,300 feet. At that point it was discovered that the pile supporting the rotary had settled to a considerable degree, amounting in several instances to as much as 18 inches. The operators shut down and drove eight more pile and shimmed on top of the settled pile. They also placed several loads of sand underneath the rig. Until the present no additional settling has been noticed.

Analysis of loads on the rotary supports as follows:

At time of setting 18⅝-inch casing:
1,500 ft. 18⅝-in. swung on rotary 87.5 lbs., wt. per foot with coupling = ... 131,250 lbs.
One-half load 1,500 ft. 4-in. drill stem on pipe set back = ... 11,250 lbs.
142,500 lbs.
Carrying capacity:
8 pile at 35,000 lbs. each = ... 280,000 lbs.

The above shows that no overloading was present.

Conclusions drawn show that the sand cratered during the first part of the drilling and as the drilling continued the load around the cellar increased. The top layer of sand sank to fill up the crater. This condition could become quite prevalent and great care should be taken in the design and erection of foundations on sand or muck bottoms. More piling should be driven or studies made relative to spacing the piling supporting the rotary further away from the cellar and using some method of truss construction to support the rotary.

Analysis of this job shows as follows:
Corners:
5—35-ft. pile at 35,000 lbs. each 175,000 lbs.
or equivalent to derrick load 700,000 lbs.
Rotary as shown before.

Example No. 4—Port Neches Field. Mat Location

Design of mat 40 by 40 feet. 3 by 12 longitudinal. No spacing. Cribbing 12 by 12.
Bottom layer 36 feet 0 inch.
Corners 12 by 12, 8 feet 0 inch square.
Cribbed 2 high.
Posting 12 by 12—10 feet 0 inch.
Braced 3 by 12 and turnbuckled.

Failure—Collapse of rotary support due to washing. The setup failed under unusual conditions. The rig was set on a 40 by 40-foot double mat. A 10-foot wood bent superstructure supported the drilling equipment. Approximately 30 feet of soft silt was penetrated before encountering clay subsoils. Conductor pipe was set and cemented with five sacks at 90 feet, and drilling proceeded to 1,500 feet. During this period the water level in the marsh was from 1 foot to 18 inches higher than ordinary due to flood waters at the Neches River. While drilling between 1,200 to 1,500 feet the mud returns thickened considerably, which was due to the silt under the mat being syphoned down the outside of the conductor pipe and jetted with the mud returns. A crater formed around cellar and under that part of foundation supporting the rotary, the rig being supported entirely by the outer edge of the mat. Efforts to fill the crater with shells and cement were unsuccessful and the rig was moved to an adjacent location.

From the foregoing examples it will be seen that there is a wide variance in design and difference in the loading values of derricks and substructures in comparison to the piling and capped foundations supporting them. It has been found that in a great many cases additional pile are used for stiffening effect and it is not believed that this money is well spent, as it does not follow that two separated timbers connected at the top only have any stiffening value in comparison to their cost. It, therefore, follows that studies should be made so that the piling system may uniformly conform in loading design to the structures above and adequate system of bracing be used as stiffeners.

A practical example of this may be seen in the engine foundation used today. Under most engine foundations 12 pile are used. These are for stiffening alone, as the biggest engine used weighs approximately 18,000 pounds and could easily be carried on one pile of average strength. It is, therefore, recommended that studies be made to reduce the number and increase the stiffness so that no special equipment need be used. A suggestion would be that four pile be used with a carefully designed system of trussed bracing. The design may be further helped by severing the drilling derrick foundation from the engine foundation.

Foundation design for Production Operations

The foregoing examples have been drilling foundations but in marsh operations there is, of course, the problem of foundations for producing equipment, such as tank battery foundations and pumping unit foundations. As far as the production department is concerned, small field batteries and pumping units are the prime considerations. The pipe line will be affected by large storage batteries and pump stations.

The main difference between tank foundations and drilling foundations is, of course, merely the difference between static and dynamic loading. In field operations, tank sizes of 500 bbls. and 1,000 bbls. are commonly used. In pipe line work tank sizes are from 20,000 to 80,000. Practice so far has placed the smaller tanks on piling or mats with cribbed or framed substructures. In the case of the larger tanks they have been placed on pile in marsh areas and on fills.

The solution of the problem for piling foundations is simple, merely being a problem of driving to the proper refusal that number of pile sufficient to bear the load imposed by the size tank specified when filled. However, when using large tanks on a fill it is necessary to prepare the fill carefully, allowing ample time to settle.

When the tank is placed and ready for filling in order to test for leaks, it is recommended that the tank be filled to about the 3-foot level and let set for 24 hours. After this period, fill another 3 feet and allow to set for the same period. This should be continued until full so as to allow for even settling and to avoid sudden loads on the fill until the soft spots have been equalized with the more stable material.

An experience of one company in the Gulf Coast area emphasized the value of this recommendation. A large tank of 55,000-bbl. capacity was placed on an earthen fill in shallow water. The fill was not prepared over a period of time and water was pumped into the tank steadily. Before the tank was full it canted to one side, sinking through the fill and to a total of 7 feet into the bottom soil. This necessitated dismantling the tank and resetting.

Another example of tank foundations in marsh areas resulted in failure of production tanks due to conditions as described below:

On a wet type of marsh 500-bbl. lease tanks were set on a structure consisting of a 24 by 24-foot double wooden mat and a wood superstructure to bring the deck 5 feet above normal tide levels. With changes in tankage facilities the 500-bbl. stock tanks were increased to 750-bbl. gun barrels. Load tests were made upon completion and further sinking of 1½ to 2-inch per foundation noted. This increased settling is equivalent to 1-inch settling per 100 pounds per square foot of additional loading. The calculated loading was increased from 306 pounds per square foot for the 500-bbl. tank to 445 pounds per square foot for the 750-bbl. gun barrel.

In the above tank battery, one tank was set on

steel mat and steel superstructure. Due to inadequate distribution of load over mat the effective supporting area was reduced to 15 by 24 feet. Upon testing the 750-bbl. tank after converting to a gun barrel the mat developed excessive settling on one side with the danger of the tank overturning. Calculated soil loading in this case was increased from 490 pounds per square foot with the 500-bbl. tank, 710 pounds per square foot with the 750-bbl. gun barrel.

In so far as pumping unit foundations are concerned, there is no particular problem relative to distribution of weights. The only recommendation the authors would have is that in either piling or mat foundations, all such foundations should be designed with the thought of replacing the drilling equipment with future pumping units. This will enable the operator to place his pumping equipment without additional expenditure for new foundations. If a piling foundation is used the problem will be simple. It will mean merely placing the pipe set-back pile in such a position as to accommodate the pumping unit load. If a mat is used it is recommended that no attempt be made to salvage the mat because (1) the labor cost of salvaging a mat is approximately the same as the initial cost of the material and (2) if the mat is left in place it will provide adequate foundation for fabricated or cribbed superstructure for future pumping requirements.

Pipe Line Stations

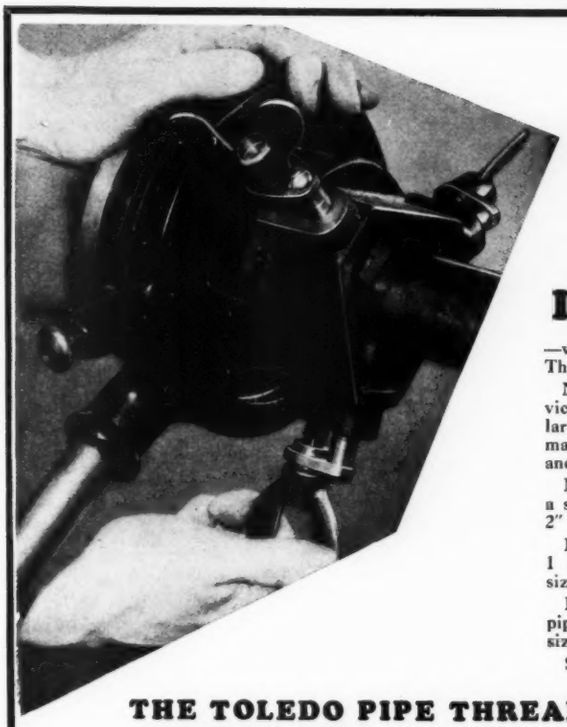
Another problem in foundation design of paramount interest is pipe line stations. Buildings will come under the heading of general construction and will have no special loading except that of hurricane wind load. This will be transmitted from the trusses to the columns to the foundation which will have to be designed to transmit these loads to the soil. This reverts back to the original problem of soil bearing.

The main problem in these pipe line stations is machinery foundations. The vertical engine and the horizontal engine will necessarily take two different types of foundations. An analysis of practice in the Gulf Coast area shows that the vertical engine takes a thick narrow spread concrete slab and a horizontal engine takes a relatively thin wide spread slab. These concrete slabs are poured on top of piling driven to secure the proper amount of frictional bearing so as to prevent settling of the slabs. It can easily be seen that the size and shape of the slabs are comparable to the thrust of the engine upon them. So far, no formulas have been developed which are recognized to correlate the horsepower of the engine to the cubical content of the block. It has been found that each individual installation is a separate problem and that the installation of each pipe line station should be treated the same as recommended hereinbefore relative to drilling rigs. We are presenting below several typical installations which will bear out this statement.

DIESEL ENGINE FOUNDATION DATA

Equipment—	Weight of concrete foundations per h.p. (lb.)	Weight of concrete per sq. ft. of area (lb.)	Sq. ft. of area per h.p. (sq. ft.)
400-h.p. motor and centrifugal	131	497	.26
350-h.p. motor and centrifugal	81	430	.20
High Speed Diesels			
300 h.p. at 550 r.p.m.	351	750	.47
750 h.p. at 360 r.p.m.	324	1,057	.31
780 h.p. at 277 r.p.m.	440	1,187	.37
810 h.p. at 277 r.p.m.	310	992	.31
1,200 h.p. at 300 r.p.m.	420	1,495	.28
1,600 h.p. at 277 r.p.m.	372	1,504	.25
Low Speed Diesels			
500 h.p. at 225 r.p.m.	454	597	.76
680 h.p. at 225 r.p.m.	418	746	.56
900 h.p. at 240 r.p.m.	662	1,125	.59
Horizontal Engines			
100 h.p.	770	566	1.7
80 h.p.	960	566	1.4

The above tabulation shows a distinct variation in values of foundation weights and areas for



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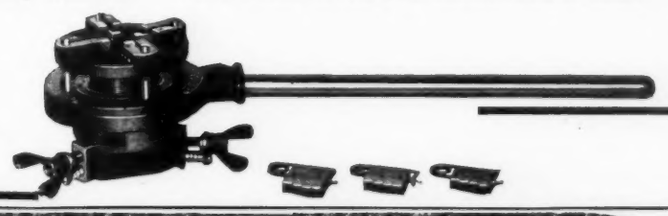

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high speed and low speed diesel engines. It is believed that through research some type of formula may be derived for determining the proportions of the foundation by considering the horsepower, weight and operating speed of the engine.

Materials

Up to the present time the specifications covering materials for operating equipment have received considerable attention, but materials used in foundations have been treated in a more or less haphazard fashion. As far as steel is concerned, the steel manufacturers have kept pace with the time and have left very little to supposition as regards strength, quality and application of their product to specific problems. However, the source of foundation materials in marsh or water operations is timber, and at this writing very little specific data have been assembled for the selection of the proper grade of timber and treatment as applied to the oil industry. It is well known that the days of large timbers at a reasonable cost are past. This condition has been brought about by unregulated cutting of the Southwest's finest natural product—Southern Yellow Pine—without the benefit of organized reforestation.

This means that in order to cut costs and secure needed strength, engineering control of timber and treating specifications will be necessary. It has been found in recent construction jobs that the use of smaller timbers of the proper structurel grade with the proper design and inspection will accomplish the same result as the larger timbers of another day when structures were built "hell for strong." Apropos of the above, it is the recommendation of the authors that any specifications and control of specifications be put in the hands of a person, or persons, qualified to pass intelligently on such materials, the same as such materials now used in the operating end of the oil industry are controlled.

As far as timber is concerned, it is recommended that the structural grading of the Southern Pine Association be used. It is too often apparent that all timber designs are based on No. 1 Common when a difference in structural values of timber could be used, cutting down the amount of board footage and adding to the structural value of the finished project. It has been shown before in this paper that over-stressing of timber is the rule rather than the exception. The same type of structural values prevail in the different grades of timber as in the various grades of steel. . . .

Wood has the merits of being strong, cheap, available and adaptable, and these qualities, taken with permanence secured through preservative treatment, make it the ideal construction material for many purposes. The salvagability of preserved wood adds to its value.

The economy of wood preservation can in no way be more effectively dramatized than by stating the following facts:

A few years ago, before preservation became common, 400 ties per mile per year were required for railway maintenance; whereas, now it is not at all uncommon to maintain the main lines of Class 1 railroads with from 100 to 125 ties per mile per year.

While all structures employing preserved wood have not given such splendid service, failures can be accounted for because of violation of some of the well-known requirements, which are:

(1) Sound wood well conditioned. (2) An unadulterated preservative possessing high degree of toxicity. (3) Deep and uniform penetration of the sapwood with preservative. (4) Uniform diffusion of preservative throughout the area penetrated. (5) Avoidance of exposing untreated interior through cuts made in the field. Good practice requires framing and boring of members before impregnation.

It requires years and years of service in the field to confirm or disprove the claims of the laboratory tests and one charged with the wise expenditure of other people's money cannot afford extensive experimentation.

The preservatives, other than creosote, which have been used extensively are the soluble salts, like zinc chloride and Wolman salts. It is well recognized that soluble salts planted in the interior of the wood when in solution, left in the wood when the carrying fluid evaporates, will again go into solution when in the presence of water, whether from rains, surface or atmospheric moisture. Definite and indisputable service tests are available to prove that soluble salts are comparable to creosote only in dry sheltered locations.

In locations exposed to the weather and in foundations where a life of more than two years is required, wood used in construction should be creosoted, the grade of lumber, the preservative, and the final retention of creosote per cubic foot being such as to meet the needs of the structure so located.

The following table will give the writers' recommendations as to the various classes of materials the strength of same, the amount and quality of creosote desirable, reference as to more detailed specifications and the locations in which recommendations are applicable.

Piles: The following is applicable to pine piles.

Pines shall conform as to physical requirements to the A.S.T.M.[1] standard specifications and as to size shall be Class A, Class B or Class C.

Class A piles are suitable for use in heavy railway bridges and trestles. The minimum diameter of butt is based upon the use of load bearing caps 14 inches in width.

Class B piles are suitable for use in docks, wharves, highway work and general construction. The minimum diameter of butt is based upon the use of load bearing timber caps 12 inches in width.

Class C piles are suitable for use in foundations which will always be submerged.

In general the A.S.T.M. specification assures sound wood free from injurious defects, of adequate straightness. Class A piles have 14-inch minimum diameters 3 feet from the butt with varying adequate tip requirements for different lengths.

Class B piles have 12-inch minimum diameter 3 feet from the butt with varying adequate tip requirements for different lengths, except that lengths 50 feet and over have 13-inch diameters 3 feet from the butt.

Class C piles are practically the same as Class B piles except that the minimum diameter 3 feet from the butt is 12 inches for all lengths and smaller tip measurements are required and may be furnished unpeeled if not to be treated. The class and length of piles required must be determined by engineering calculation.

Treatment: All treatment shall conform to the requirements of the American Wood-Preservers' Association standards as set forth in the American Wood-Preservers' Association Manual of Recommended Practice.[2]

Kind of Preservation: Coal tar creosote Grade 1 American Wood-Preservers' Association Standard specification.

Final Retention per Cubic Foot:[3] For land or fresh water use 16 pounds per cubic foot for "full cell" treatment. For marine use in northern Atlantic waters, 16 pounds per cubic foot, full cell treatment. For marine use in waters where marine borer attack is usually very severe—22 pounds per cubic foot, full cell treatment. In the event Douglas Fir piles are used, the final retention should be 12 pounds per cubic foot full cell for land or fresh water, and 14 pounds per cubic foot, full cell, for all marine locations.

These limits are set because of the refractory nature of fir and its impenetrability.

Lumber and Timber: Lumber and timber shall conform to the grades outlined in the Southern Pine Association Standard Specifications[4] and the West Coast Lumbermen's Association grading and dressing rules current at the time of manufacture. The grade and size specified shall be determined by engineering calculations of the load required.

Treatment: All lumber and timber shall be treated in accordance with the American Wood-Preservers' Association Standards as set forth in the Manual of Recommended Practice.

Final Retention of Preservative:[3] Pine less than 5 inches in thickness, 10 pounds coal tar creosote per cubic foot, "empty cell" treatment. When used in salt water, 16 pounds coal tar creosote per cubic foot, full cell. Pine 5 inches and greater in thickness, 8 pounds coal tar creosote per cubic foot, empty cell. When used in salt water, 12 pounds coal tar creosote per cubic foot, full cell.

Fir less than 5 inches in thickness, same as pine. Fir 5 inches to 9 inches in thickness, 8 pounds, empty cell. When used in salt water, 10 pounds, empty cell. Fir 10 inches to 14 inches in thickness, 6 pounds, empty cell. When used in salt water, 8 pounds, empty cell.

One great advantage of using chemically preserved wood is its salvage value and the low cost of salvaging. If standardization of oil field structures can be carried to the point permitting prefabrication and preboring of all members so that bolted structure can be used, the salvage will approach 100 per cent.

Conclusion

In the foregoing, the authors have tried to present a picture of present practices, along with several recommendations as to specific items. We believe that sincere study and the utilization of the best engineering technique will not only bring a better understanding of problems which confront the operators today, but will enable engineers and operators to build the most workable units at the least cost. This, of course, means still maintaining the proper factors of safety.

The above reverts to operating and engineering practices of industries older than the oil industry which have had to develop engineering technique to survive and pay dividends. It is therefore suggested that the petroleum industry study these problems and make available the acquired information so as to consolidate its position before the time arrives when it will be forced into economic measures more stringent than those presented today.

Acknowledgments

The authors desire to express thanks for data and suggestions received from R. S. Manley, president, Texas Creosoting Co., Orange, Tex.; American Wood Preserves' Association, Chicago, Ill.; I. W. Alcorn, engineer, Pure Oil Co., Houston, Tex.; Chase E. Sutton, vice president, Pure Oil Co., Houston, Tex.; C. J. White, engineer, Texas Pipe Line Co., Houston, Tex.; S. W. Oberg, construction engineer, Humble Oil & Refining Co., Houston, Tex.; and Hu M. Harris, engineer, Humble Oil & Refining Co., Houston, Tex.

[1] A.S.T.M. D25-35T: American Society for Testing Materials, 260 S. Broad St., Philadelphia, Pa.
[2] American Wood Preservers' Association, Chicago, Ill., 1936.
[3] Federal Specification TT-W-571; Government Printing Office, Washington, D. C.
[4] Specifications for grades of Long Leaf and Short Leaf Southern Pine, Lumber and Timber; Southern Pine Association, New Orleans, La., 1932.

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph.D., Technical Editor

Shipments of Natural Gasoline and Other Volatiles in Tankcars

What is the pressure existing in tankcars loaded with natural gasoline and similar volatile products? How is this matter of pressure kept under control? Who pays for any evaporation losses in the shipments.—F. H. A.

Natural gasoline is shipped in the United States in both naked and insulated tankcars. These cars must be constructed under set specifications and operated to comply with regulations and laws of the American Railway Association, federal laws and Interstate Commerce Commission. The tanks of these cars are tested, when made, under a water pressure much in excess of what will be required for the products handled. Any pressure that may develop in the tank during shipment is relate dto the volatility of the product and the atmopheric temperature.

All cars are equipped with automatic valves for the control of pressure conditions, expansion and contraction. The naked ordinary cars have the expansion, "blown off' valve set at 25 pounds per square inch during the months of March to October and 33 pounds from November to February; all inclusive.

A special class of tankcars, used for the more volatile gasolines, such as natural gasoline, are insulated. These have the expansion valve set at 40 pounds for the season March to October and 45 pounds during November to February.

There is another class of cars which are constructed of thicker steel and built to conform to rigid specifications of the U. S. Interstate Commerce Commission. These are for the shipment of liquefied hydrocarbons, such as propane, butane and similar compounds as mixtures. These compounds may have a vapor pressure in the tank so high that the relief valve is set at from 75 to 450 pounds. These tanks must pass a hydrostatic pressure test of from 100 pounds to 600 pounds. The shipper is required to supply natural gasoline of some agreed vapor pressure. Should there be a loss, due to evaporation, when the product reaches destination, the purchaser is usually reimbursed or adequate allowed.

Synthetic Preparation of Fatty Acids From Petroleum

The recent report that some Russian institution has announced the conversion of petroleum residues to fatty substances is interesting. Do you have any details of this work?—R. S.

Rumors do appear very often to the effect that somewhere somebody has perfected a synthesis resulting in the preparation of edible fats from petroleum. However, this long sought objective does not appear to have been attained.

There have been efforts made, probably extending back about 60 years, to convert the organic compounds, so abundant in coal and petroleum, into products, normally of animal or vegetable origin, belonging to the fatty acid group. During this long period there have been numerous reports of partial success.

The Mendeleeff Institute of Moscow after working on this problem for many years has not reported a satisfactory product. It may be true that something of a fatty acid nature has been made in small quantities, but any product of this sort has been found to be difficult to separate from the unconverted oil and to remove very objectionable odors.

A report was made in 1935 by Heublum giving a description of some Russian studies. The report first mentioned may have originated from this. It was stated that synthetic materials suitable for use in soaps had been made. The investigators subjected petroleum distillates to oxidation and sulfonation with sulfur trioxide. With heavy treatment of the crude oil with sulfuric acid, saturated with the trioxide, a material has been produced which is used in fat-slitting.

The trioxide purified oil, after freeing it from side-products, is washed with caustic soda, then oxidized with air at about 235° F., over a period of 48 hours. A catalyst, calcium naphthenate, is used. The oxidized oil is neutralized with caustic soda and any soap found is obtained by settling. The unoxidized portions are subjected to repeated oxidation. Just what yields have been obtained in this treatment has not been announced.

Another process converts to calcium soaps by treating the sodium compounds with bleaching powder. Other methods have been reported but with no exact details.

Questions on Petroleum Technology may be sent to Dr. Charles K. Francis, The Oil and Gas Journal, Tulsa, Okla. When a copy of the answer is desired postage should be enclosed.

CHEMICALS FOR THE PETROLEUM INDUSTRY

CALCIUM CARBIDE

Use—Making acetylene.

Form—Granular solid.

Formula—CaC_2.

Molecular weight—64.

Specific gravity—2.22.

LIMITATIONS

The sizes shall pass, P, and be retained, R, on screens with circular openings (inches) of the diameters specified—Lump—P 3½, R 2; Egg—P 2, R ½; Nut—P 1¼, R ⅜; Quarter—P ¼, R 1/12.

Shall yield, average, minimum 4.5 cu. ft. of acetylene per lb. at 60° F. and 30-in. barometric pressure.

The evolved gas shall not contain more than 0.05 per cent, by volume, of phosphuretted hydrogen.

Reference: Federal Standard Stock Catalog, O-C-101. Methods of test are included.

Machines for Friction Tests on Extreme Pressure Lubricants

What is the best machine for making friction tests on extreme pressure lubricants? What is the cost of the machine and where may it be purchased?—W. F. P.

There are a number of machines which have been proposed as suitable for testing the lubricating value of oils, especially those oils known under the name "extreme pressure lubricants." C. W. Woolgar has given a description of the important machines.

The machines for testing extreme pressure lubricants best known in the United States are the Timken and Almen. The development of the Timken apparatus was first described by Wooler. The present form tests are run in this apparatus on the oil at rubbing speeds and pressures suitable for the particular lubricant. A test block is pressed against a revolving bearing so that pressures up to 20,000 pounds per square inch are attained. After 30 minutes the block is examined for signs of wear.

The Almen testing machine employs a drill rod journal and a split bushing. Pressure is applied to the split bushing through a mechanical and hydraulic loading system. The entire assembly, including the oil sample cup and loading cylinder, are cradled around the center of rotation of the journal. The torque developed is indicated by a gauge. The belt driven machine at a journal speed of 600 r.p.m. Weights are applied until seizure results. This machine has been further developed by the General Motors Corp.

The Phelps machine has a rotating vertical shaft, at the lower end of which is attached a flat bearing surface which rests on a fixed surface. These are surrounded with an oil cup, the oil reaching the bearing surfaces through oil ways. The shaft is loaded until seizing results.

The modification of modern lubricating oils includes pour test depressants, viscosity-temperature gradient improvers, antioxidants, corrosion inhibitors, load-carrying capacity improvers and oiliness improvers. According to Lincoln, Byrkit and Steiner: "The only satisfactory final proof of the merit of these is actual long-time service tests on the road. No single or limited group of laboratory tests may be depended upon for final proof, although they may be of distinct value in preliminary studies."

The data obtained from the testing machines now in use cannot be, with reliability, translated into car performance. The results from two machines have not been close enough to classify a number of extreme pressure lubricants in the same order. Any one of the machines will furnish data suitable for local control purposes. The machines now available may be purchased through instrument dealers from approximately $250 to $1,500.

The S.A.E. or General Motors apparatus is now being developed by a committee so it is not available for general distribution.

References: Woolgar, The Oil and Gas Journal, Sept. 19, 1935, page 34; E. Wooler, J. Soc. Auto. Eng., 28, 53, 1931; Wolf and Mougey, same, Nov. 17, 1932, page 58; Lincoln, Byrkit and Steiner, Ind. & Eng. Chem., 28, 1,194, 1936.

Here Are the Correct Answers to the
BAKER I.Q. CONTEST

It was certainly interesting—although not exactly surprising to us—to find out how many persons there are in the Oil Industry who have a 100% I. Q. Rating on Baker Products.

There were hundreds of contestants—rough necks to general managers—from practically every oil producing state, and the tabulations show that . . .

28% ANSWERED ALL 20 QUESTIONS CORRECTLY

30% " 19 " "

18% " 18 " "

Prizes are now going forward to the winners, and if you answered 18, 19 or 20 questions correctly, you either have received your prize or will receive it within a day or so.

Congratulations to the winners, and to evidence our appreciation, every contestant will receive a useful gift—watch for yours!

Meanwhile, we are working out plans for a bigger and better I. Q. Contest in the near future, and you will need a Baker Catalog or a 1937 Composite Catalog to find all the answers. If you do not have a Baker Catalog in your files, may we suggest that you write for one today—it's free—it's full of important I. Q. information and is useful to any oil man in his every day work.

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Page numbers below refer to either the 1937 Baker Catalog or the 1937 Composite Catalog.

1. What large Supply Company is celebrating its 75th Anniversary in 1937?
Oil Well Supply Company

2. The valve in a "Bakwik" Drill Pipe Float . . .
.....screws into the body
.X...is held in place by tool joint pin
.....locks into a tee-slot
See Page 234

3. Baker Kelly Straighteners operate by
.....steam pressure
.....leverage on a crow bar
.X...hydraulic pressure
See Page 237

4. If drill pipe has been twisted off in a cave, what Baker Oil Tool would you find useful?
Baker Rotary Wall Hook, or Baker Yungling Spiral Guide; see Pages 236 and 244

5. The valve assembly in a Baker Cement Float Shoe is made of . . .
.....concrete .X...bakelite
.....cast iron .....brass
See page 191

6. Name three important uses for the Baker Model F Cement Retainer . . .
See Page 207 for 7 uses

7. Cement can be directed upward around shoe and casing by using a . . .
.....Baker Cable Tool Core Barrel
.X...Baker Cement Dump Bailer
.....Baker Cement Whirler Float Shoe
.....Baker Yungling Spiral Guide
See Page 195

8. Cores taken from extremely hard formations with a Baker Cable Tool Core Barrel usually are recovered in what form or shape?
Biscuits; see Page 230

9. What is the purpose of the rubber ring in a Baker Cement Float Collar?
To provide a leak-proof seal against back-pressure; see Page 189

10. If plastered rotary mud prevents a well from coming in easily, what Baker Oil Tool do you need?
Baker Rotary Wall Scraper; see Page 216

11. One of the many successful uses of a Baker Cement Retainer is to . . .
.....enlarge hole before cementing
.....guide the overshot when fishing
.X...straighten drill pipe
.....perform squeeze jobs
See Page 207

12. This core was taken from the side wall of an open hole by using a . . .
.....Baker Cable Tool Core Barrel
.....Baker Wall Hook
.X...Baker Wall Sampler
.....Baker Whirler Cementing Collar with Basket
See Page 222

13. What Baker Oil Tool is used to cut formation as shown in this illustration?

Baker Rotary Bottom Hole Scraper; see page 221

14. If you want to retain cement "tailings" inside the casing, what one of these Baker Tools would you use?
.....Baker Cement Retainer
.X...Baker Cement Float Collar
.....Bakwik Drill Pipe Float
.....Baker Cleanout Bailer
See page 198

15. This material was drilled out of a Baker Cement Float Shoe; what is it?
Concrete, Bakelite and Rubber; see Page 192

16. The minimum reaming size of a No. 3-A Baker Wall Scraper is 5¾"—what is its maximum reaming size?
..11..inches.
See Page 218

17. The valve ball in a Baker Cement Whirler Float Shoe is made of . . .
.....rubber .....cement
.X...bakelite .....wood
See Page 189

18. The Canvas Basket Assembly on a Baker Whirler Collar serves to . . .
.....prevent blowouts
.....scrape off rotary mud
.X...protect lower oil sands from cement
See Page 199

19. Baker uses concrete in all equipment for guiding, floating and cementing casing, because it is . . .
.X...easy to drill up and circulate out of the hole
.....stronger than cast iron
.....cheaper than alloy steel
See Page 192

20. What color concrete is furnished in Baker Cement Equipment to determine the presence in "returns" of material drilled out of shoe or collar?
Red; see Page 190

WATCH FOR DETAILS OF A BIGGER AND BETTER I. Q. CONTEST TO BE ANNOUNCED SOON IN THE LEADING OIL PUBLICATIONS!

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Drilling Activity in Colorado and New Mexico

We are anxious to secure information regarding oil well activities in Colorado and New Mexico, particularly Colorado. We want to know the principal points in these two states where active drilling is going on, the number of barrels produced, and the names of the counties in which this production is obtained.—G. H. L.

In each issue of The Oil and Gas Journal there is a summary of the week's developments. This is always to be found at the beginning of the field reports and it will aid you in keeping track of what is going on in the oil fields.

For instance in the issue of March 18 on page 65 you will find that in Lea County, New Mexico, there were 18 rigs up, 95 wells drilling, 9 completions during the week ending March 13, these wells had a total initial production of 3,087 bbls. Also that there are 2,017 wells in this county and the average daily production is 100,970 bbls.

The Colorado report is on page 86 of this same issue and in addition to this we suggest you read a special article on Colorado activities published in the November 12, 1936, issue of The Oil and Gas Journal on page 55. There is a map accompanying this article and it will serve to aid you in locating active wells, also large blocks of land under lease which may be drilled soon.

Use Acid to Remove Lost Bit

In drilling a well we lost a bit at about 950 feet when the pin broke. We got the bit loose but cannot get it past a point about 30 feet off bottom of the hole. The place where the bit sticks is in very hard formation. Can you suggest method for recovering the bit?—C. H. W.

From your description of this trouble it would seem you have battered the cutting edge of the bit in attempting to drill in this hard formation and in so doing the bottom of the hole is larger than the upper portion in softer formations. As a consequence the pin was broken and now you find the bit sticks when it is pulled up high enough to enter the smaller diameter hole.

The bit can be fished out of the hole with a socket to fit over the collar, a fishing tool which can be secured from any fishing tool manufacturer. But the trouble is that you cannot pull this bit up through the small diameter hole. It is therefore suggested you secure some hydrochloric acid and introduce it into the hole with a dump bailer.

You state the hole is full of water and it is therefore suggested before using the acid you consult a chemist or chemical company and explain the condition of the hole, the character of the fish and other details so that recommendations as to the best kind of acid to use for your particular purpose may be secured. If the water is salt, using hydrochloric acid might not be very effective, but the chemist can advise on this point.

As this bit is stuck about 30 feet off bottom it is suggested the bottom of the hole be filled with a salt solution if it is possible to bail out the balance of the water. The acid will have a specific gravity of about 1.075 if 15 per cent solution is used. To float this on the salt water it is necessary that the water have a higher specific gravity than the acid. This can be secured by adding plenty of salt to the fresh water in the hole.

The following table is published in Jeffery's *Deep Well Drilling*:

Size hole in.	Tools on bottom, minimum carboys of acid	Tools off bottom, minimum carboys of acid	Tools on bottom, gallons of salt solution per ft. off bottom	Lbs. salt per ft. off bottom
5	2½	4	0 8 to 1 0	1 5 to 1 6
5⅝	3	6	1 1 to 1 3	1¾ to 2 0
6¼	4	7	1 3 to 1 6	2 0 to 2 6
6⅝	4½	7½	1 5 to 1 8	2 4 to 2 9
8¼	6	10	2 3 to 2 8	3 7 to 4 5
10	10	14	4 0 to 4 2	6 4 to 6¾

Note—Strength and kind of acid depends on formation; composition of "salts solution" depends upon acids used.

Where there is fluid in the hole, either water or oil, or where there is a flow of either fluid or gas, technical experience will govern the amount of acids necessary and method of procedure.

Sand Used in Tamping Shots in Holes

Can you give or refer me to reliable information about the quantity of sand that should be used to sand tamp a shot? In a well recently shot in this field the bottom of the casing was damaged and some of the drillers claim insufficient tamping material was used. Others attribute this trouble to different causes. Any information I can obtain will be appreciated.—O. E. R.

In "Petroleum Production," a new book by Wilbur F. Cloud of the University of Oklahoma, it is stated "Tamping or stemming may be defined as the amount of weight (oil, water or sand) placed above a charge of explosive to confine it and cause an appreciable amount of the force of explosion to be directed laterally instead of upward. A 'dry' tamp is produced by using gravel or damp sand, whereas, a 'wet' tamp signifies the use of oil or water above the charge."

In using oil or water for tamping it is usually considered good practice to fill the hole above the torpedo with sufficient fluid to exert a pressure equivalent to a static head of 100 feet. For water this would mean a pressure of 43.4 pounds per square inch. The quantity of water needed to exert this pressure will vary with the diameter of the hole. For example it will only require 65 gallons of water to fill a 4-inch casing 100 feet, or approximately 1½ bbls. For a 6-inch hole 3½ bbls. will be required and for an 8-inch hole 6.2 bbls. The specific gravity of the oil used will determine the quantity needed to exert the same pressure as secured by a shorter column of water.

The volume of sand used for tamping is given in the following table:

SAND VOLUMES AND WEIGHTS WHEN USED FOR TAMPING SHOTS IN CASING OF VARIOUS SIZES

Diameter of hole (inch)	Cu. ft. sand per foot of hole	Lbs. sand per ft. of hole	1 cu. yd. in linear feet
5⅝	.147	11 76	184
6	.196	15 69	138
6¼	.213	17 02	127
6⅝	.239	19 15	113
7	.267	21 39	101
8	.347	27 82	77

25 cu. ft. sand = 2,000 lbs.
1 cu. ft. sand = 80 lbs.
1 cu. yd. sand = 2,160 lbs.

Volume of a cylinder = area × height = .7854 d^2h or Pi r^2h

Casing Programs for Limestone Well

It is my hope to open a new oil field soon. The formation is limestone up to about 110 feet of the surface. Water shut off is known to be about 400 feet with the production in a limestone at 945 feet, accompanied by high gas pressure. Oil and gas may have seeped into the upper formations. Can you suggest a casing program for wells in such a field? I worked in a similar field where about four joints of 12-inch casing was set and cemented and equipped with central head. The hole was then reduced for 10½-inch casing set to shut off water and the flow string was either 6⅝ or 8¼-inch run with a casing shoe and set in the top of the producing formation. The strata separating oil and water was very thin and the producing formation could not be drilled very deep. Any suggestions you can offer will be appreciated.—C. M.

It is assumed that you intend to drill this well with cable tools. Using that method of drilling, your casing program seems to be quite satisfactory, except the setting of the flow string. Modern practice indicates a preference for cementing each string of casing rather than setting with shoe. It is all right to use a casing shoe when the casing is run, but for a permanent job it is better to use cement behind the casing.

If the producing formation is thin and there is water immediately below the oil it is recommended that the flow string of casing be set above the producing formation before it is penetrated. In Kansas, where there are some fields producing from the limestone, it has been found there is a marked difference in capacity between wells drilled in before and after setting the flow string.

When the producing formation is opened before the casing is run and cemented, it has been noted that a portion of the oil has been cut off and the wells so completed are not as good as wells where the casing was run and cemented before the producing strata was drilled. This difference was quite marked in some wells, but there may have been other conditions influencing the wells' capacities, but it is undoubtedly good practice to prevent contamination of the producing formation as much as possible.

It has also been found that wells in the limestone area where water was immediately below the oil have been better producers and did not cut to water as quickly when the hole was drilled into the top of the pay only a short depth. In many wells it has been the practice to just touch the top of the lime when drilling in after the flow string of casing was set and cemented. The water then will aid in driving the oil to the well if the rate of production is so regulated.

If the hole is drilled deeply into the producing formation the water will tend to cone around the bottom of the well and cut the oil. There are wells in limestone production where some operators feel that without water the production of oil is limited. Their contention is that if the oil is to be produced some water must be produced along with it, for the water flushes the oil out of the formation. This forms a natural water flood and if properly controlled, it is contended by some, will result in greater recovery from fields where it is effective than from fields where little or no water is present.

Mid-Continent Refiners Increase Crude Runs to New Year's High in April

By D. H. STORMONT

Refiners in the Mid-Continent will run approximately 550,450 bbls. of crude to stills daily throughout April, according to estimated refining schedules made at the first of the month. The daily increase of 16,575 bbls. over the March total continues the upward swing began in January, excepting the 8,000-bbl. decrease in March. Thus refinery operations in the Mid-Continent will be at the highest point of the present year, some 44,000 bbls. over April, 1936, and will be only approximately 7,000 bbls. lower than the peak established in August, 1936.

All but three of the eight districts show increases over their March refining schedules, these areas being Arkansas, East Texas and North Louisiana. In Arkansas the slight reduction of 300 bbls. is due to Lion Oil Refining Co. lowering its daily crude runs to stills, while in North Louisiana the decrease is due to Griswold Refineries, Inc., shutting down both its Shreveport and Sandra plants.

East Texas

The decrease in the area comprising the East Texas district is due mainly to General American Refining Co. shutting down its Gladewater and Overton refineries. The company's Arp refinery was closed down in March. Therefore the shutting down of the other two plants serves to lower the output of the East Texas area by 7,000 to 9,000 bbls. daily since each refinery has been running 2,500 to 3,000 bbls. daily for the past few months.

To offset this decrease, several East Texas refining companies are increasing their daily runs to stills, the refineries showing the largest increases in daily schedules being the Danciger Refineries, Inc., Clay Refining Co. and Tower Refining Co. The Waco refinery of Master Petroleum Co. is being reopened this month after being shut down for the past eight months and will refine about 1,000 bbls. of crude daily during April. Talco Asphalt & Refining Co.'s refinery at Mount Pleasant is still under construction and is scheduled for completion in the near future. The Talco field is now producing about 23,000 bbls. of crude daily, with a little over half of this amount being transported by Humble Oil & Refining Co. through its trunk line. The remainder is being diverted to tankcar shipments, storage and to the few small refineries located in that field. Completion of the Mount Pleasant refinery will serve to increase greatly the importance of this area as a refinery center.

The greater portion of the April increase may be attributed to renewed activity in Oklahoma, the increase amounting to 7,365 bbls. and serving to bring the total daily crude runs to stills to 159,315 bbls. Practically all refiners in this area are either holding their runs to stills at March levels or are increasing them by slight amounts.

Kansas Runs Increased

In Kansas, refiners generally are increasing their daily runs by small amounts. The total daily refining schedule for this area during April will be approximately 4,200 bbls. higher than in March or 131,180 bbls. daily. Derby Oil Co. and Kanotex Refining Co. are raising their daily refining schedules by 500 bbls. while many others are increasing daily runs by somewhat smaller amounts. The Chase refinery of Cusco Oil & Refining Co. will remain closed down during April as will Russell Refining Co.'s Russell plant. Shallow Water Refining Co.'s plant now under construction in Scott County is rapidly taking shape and is expected to be completed about April 1. The refinery will handle crude from nearby production and its principal product will be road oils. Financing of the plant is by John Allison and John Dryden, both of McPherson, Kans.

Crude runs to refineries in West Texas and in the Panhandle are being boosted by about 4,675 bbls. although many of the smaller refineries in this area are substantially reducing their runs. Phillips Petroleum Co. is increasing daily runs to its Borger plant by 3,400 bbls., thus accounting for the majority of the increase over March.

Mid-Continent Crude Runs

Average Daily (Barrels)

(Advance estimate compiled by The Oil and Gas Journal)

	1935	1936	1937
January	426,070	501,600	531,535
February	448,810	519,960	541,790
March	451,510	478,760	533,875
April	467,765	506,775	550,450
May	466,015	513,510	.....
June	485,015	527,225	.....
July	494,210	539,370	.....
August	508,960	557,650	.....
September	541,080	553,215	.....
October	533,620	536,330	.....
November	524,475	548,015	.....
December	511,025	535,500	.....

Operation by Refinery Districts

Daily crude runs

	April	March	Incr.
Arkansas	23,000	23,300	*300
East Texas	53,555	53,935	*380
Kansas	131,180	126,950	4,230
N. Central Texas	42,635	41,450	1,185
North Louisiana	40,550	42,050	*1,500
Oklahoma	159,315	151,950	7,365
Southwest Texas	22,300	21,000	1,300
W. Tex. Panhandle	77,915	73,240	4,675
Total	550,450	533,875	16,575

*Decrease.

Estimated Daily Average Mid-Continent Refinery Crude Runs for April

ARKANSAS

Company and location—	Daily capacity	Av. dly. runs April	Av. dly. runs March
Berry Asphalt Co., Waterloo	2,000	1,000	1,000
Henry H. Cross, Smackover	6,000	4,500	4,500
Lion Oil Ref. Co., El Dorado	13,000	9,700	10,000
Macmillan Pet., Norphlet	2,500	2,000	2,000
Root Pet. Co., El Dorado	12,000	5,500	5,500
Stephens Ref. Co., Stephens	700	300	300
Total	36,250	23,000	23,300

KANSAS

Barnsdall Ref. Co., Wichita	6,000	5,000	5,000
Chase Ref. Co., Chase	800	500	500
Cusco Oil & Ref. Co., Chase	3,100	(*)	(*)
Derby Oil Co., Wichita	8,000	6,000	5,500
Dickey Ref. Co., McPherson	3,500	1,800	1,500
El Dorado Ref. Co., Eldorado	5,000	3,500	3,500
Falcon Ref. Co., Inc., Great Bend	800	600	500
Fredonia Oil & Ref. Co., Fredonia	250	100	100
Globe Oil & Ref. Co., McPherson	12,000	10,000	10,000
Kanotex Ref. Co., Arkansas City	12,000	6,500	6,000
Kreuger Ref. Co., Natona	150	50	50
National Ref. Co., Coffeyville	8,000	4,500	4,000
Pet. Products Co., Chanute	800	800	800
Phillips Pet. Co., Kansas City	23,000	14,330	14,200
Shallow Water Ref. Co., Scott City	1,500	(†)	(†)
Shell Petroleum Corp., Arkansas City	20,000	19,000	18,700
Sinclair Ref. Co., Coffeyville	20,000	8,500	8,500
Sinclair Ref. Co., Argentine	11,000	7,500	7,000
Skelly Oil Co., Eldorado	23,000	17,000	16,500
Socony-Vacuum Oil Co., Inc., Augusta	20,000	17,000	17,000
Standard Oil Co., (Indiana), Neodesha	20,000	6,000	5,500
Vickers Pet. Co., Potwin	3,500	2,500	2,200
Total	203,650	131,180	126,950

*Shut down. †Under construction.

OKLAHOMA

Anderson-Prichard Ref. Corp., Cyril	6,000	4,500	4,500
Barnsdall Ref. Co., Barnsdall	6,000	3,500	3,500
Barnsdall Ref. Co., Okmulgee	10,000	5,000	4,500
Bell Oil & Gas Co., Grandfield	5,000	3,000	3,000
Black Gold Ref. Co., Oklahoma City	3,000	1,800	1,800
Champlin Ref. Co., Enid	16,000	6,500	6,000
Continental Oil Co., Ponca City	30,000	20,000	20,300
Cushing Ref. & Gasoline Co., Blackwell	1,700	1,700	1,700
Cushing Ref. & Gasoline Co., Cushing	6,200	2,500	2,500
Deep Rock Oil Corp., Cushing	10,000	9,000	9,000
Eason Oil Co., Enid	5,000	2,500	2,300
Empire Oil & Ref. Co., Okmulgee	4,000	2,500	2,200
Empire Oil & Ref. Co., Ponca City	12,000	9,000	9,000
Globe Oil & Ref. Co., Blackwell	8,000	4,700	4,500
Johnson Oil Ref. Co., Cleveland	6,000	3,500	3,200
Knox Ref. Co., Covington	250	100	100
Mid-Continent Pet. Corp., West Tulsa	40,000	21,500	19,000
Omar Ref. Co., Garber	4,000	2,700	2,500
Peppers Gasoline Co., Oklahoma City	500	400	400
Phillips Pet. Co., Okmulgee	6,500	5,700	5,400
Pure Oil Co., Muskogee	10,000	8,650	9,400
Rock Island Ref. Co., Beckett	6,500	3,000	2,500
Sinclair Ref. Co., Sand Springs	8,000	4,500	4,500
Sooner State Ref. Co., Oklahoma City	700	350	350
Sun Oil Co., Yale	5,000	2,000	2,000
Sunray Oil Co., Allen	8,000	2,800	3,400
Texas Co., West Tulsa	16,000	9,700	9,500
Tide Water Oil Co., Drumright	15,000	11,000	11,000
Triangle Prod. & Ref. Co., Oklahoma City	1,200	950	900
S. L. West Ref. Co., Oklahoma City	1,000	200	200
Wilcox Oil & Gas Co., Bristow	6,000	2,400	2,200
Yale Oil Corp., Yale	2,000	(*)	(*)
Total	264,050	159,315	151,950

*Shut down.

(Continued on Page 98)

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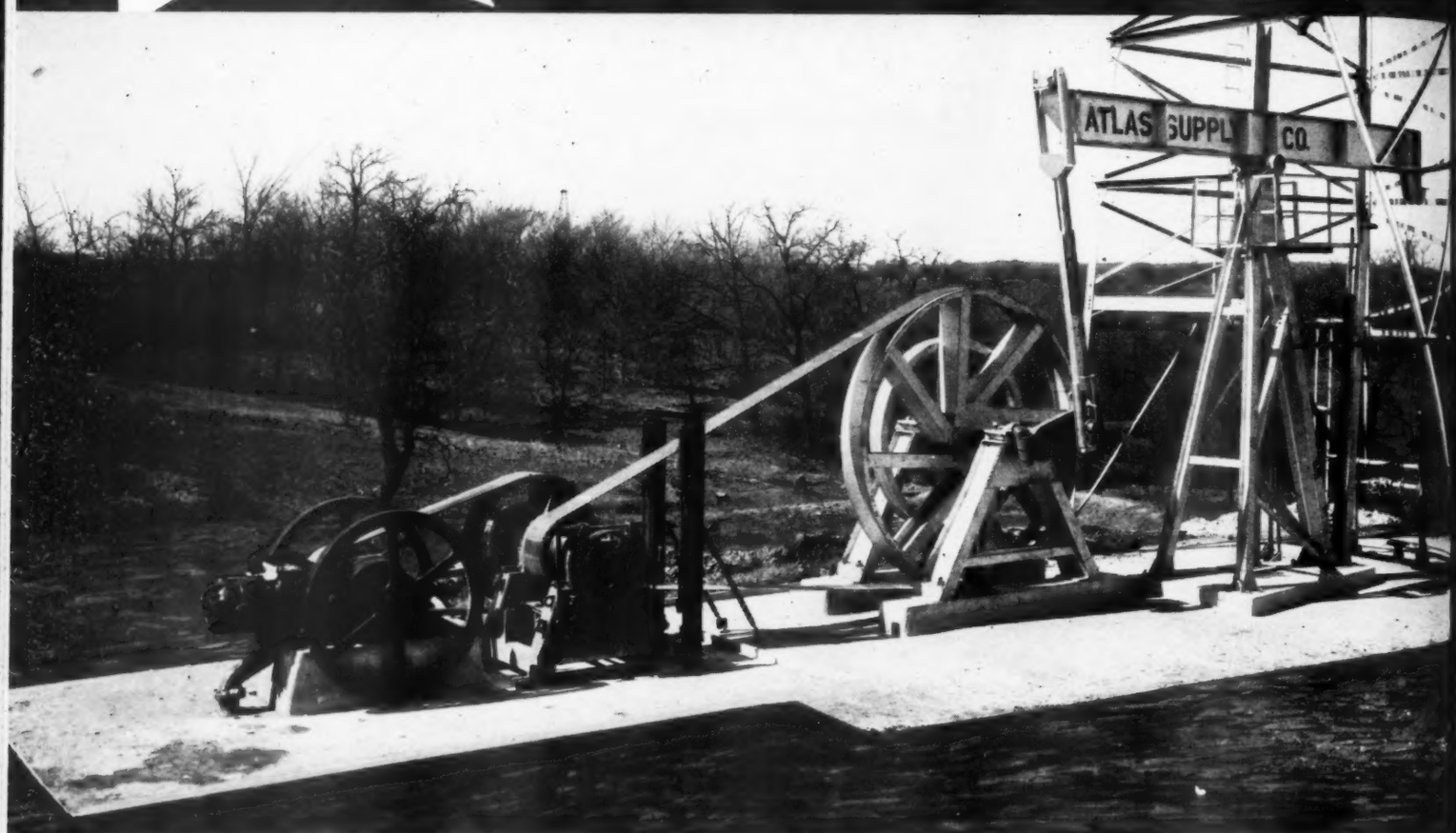

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FIELD OPERATIONS

Summarizing the Week's Developments

The largest well of the week in any field was Ohio Oil Co. No. 54-A Yates in the Yates field in Pecos County, West Texas, which flowed 4,188 bbls. in one hour, or at the rate of 100,512 bbls. per day. As large as it was, it did not break any record for that field. Ward County's 11 completions included two that flowed an initial 24-hour production of 8,216 bbls. and 4,147 bbls. respectively, and another that started at 3,080 bbls. Hockley County was definitely added to the West Texas' producing counties, a wildcat having shown 100 bbls. production in 6½ hours on a preliminary test. Eighty locations were staked in West Texas last week. More deep sand production was found in Wilbarger County, and a Shackelford County wildcat came in producing 4,000,000 feet of gas at 1,594 feet. A wildcat in west central Gray County, in the Texas Panhandle, is showing oil in Granite Wash and is regarded as a discovery. Fifteen wells were completed in Talco, in Titus and Franklin counties, all pumpers, and two flowing wells are in in the Sulphur Bluff pool in Hopkins County. The Southwest Texas field reported a new pool in Starr County, and new sands were uncovered in various fields. In the Gulf Coast district a distillate well was brought in in Harris County, north of Houston in a wildcat test on the Bammel Prospect. The discovery well in the Palacios area in Matagorda County is showing 90 per cent salt water. The Lockridge field was extended, and in the Louisiana side of the Gulf Coast the LaFitte pool was extended 1,800 feet.

LOUISIANA-TEXAS

The Rodessa area in North Louisiana and eastern Texas is dividing interest with the Lisbon field in Claiborne Parish. Three new wells are in in the latter pool and 15 new operations have been started. A 50,000,000-foot gasser was completed in Marion County, Texas. Two other key wells in the Texas side are still in the testing stage.

OKLAHOMA

A Stephens County, Oklahoma, wildcat blew in as a large gas well after being abandoned. A gas well in the Tussy pool, Garvin County, continued to defy operators to control it after blowing wild for more than a week. The new Langston well, Logan County, was completed with initial of 10,165 bbls. Ten producers and one dry hole were completed in the Fitts field, Pontotoc County.

KANSAS

The Bemis pool, Ellis County, Kansas, was extended northward and southward. In Rice County, 22 wells were completed, all but one being oil wells. Another Siliceous lime well was reported in the new Shambaugh pool, northwestern Elk County.

ROCKY MOUNTAIN AREA

A 1,700-bbl. well was completed on the Garland dome in Wyoming and a 2,000-bbl. well in the Lance Creek field. The Montana fields are thawed out and new wells are reported from Cut Bank and Kevin, and in Yellowstone County.

MICHIGAN

The new Buckeye Township field in Gladwin County, Michigan, is increasing steadily in production, and was extended a quarter of a mile north in the past week. The field is rapidly nearing a daily production that will tax its 18,000-bbl. pipe line capacity, and the larger wells in the field may soon have to be prorated.

Completions in All Fields

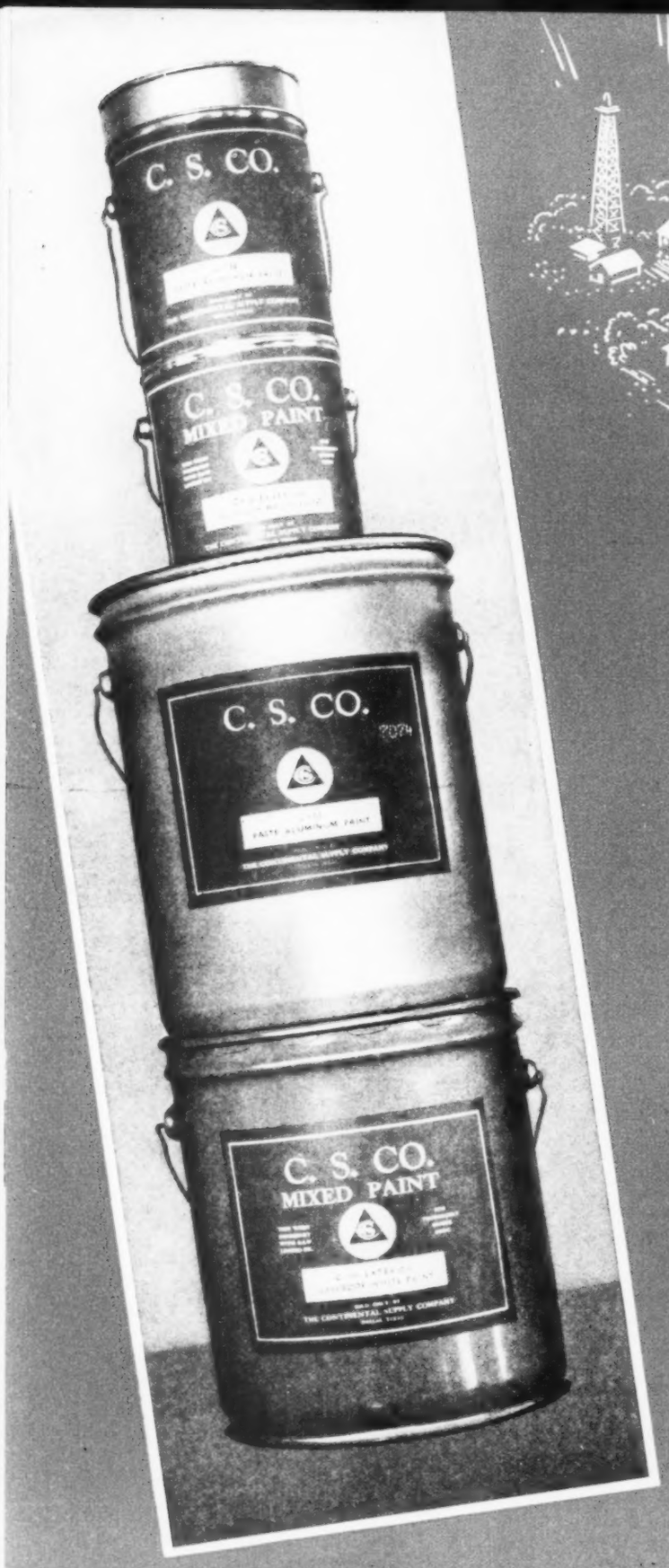
(Week Ending April 3, 1937)

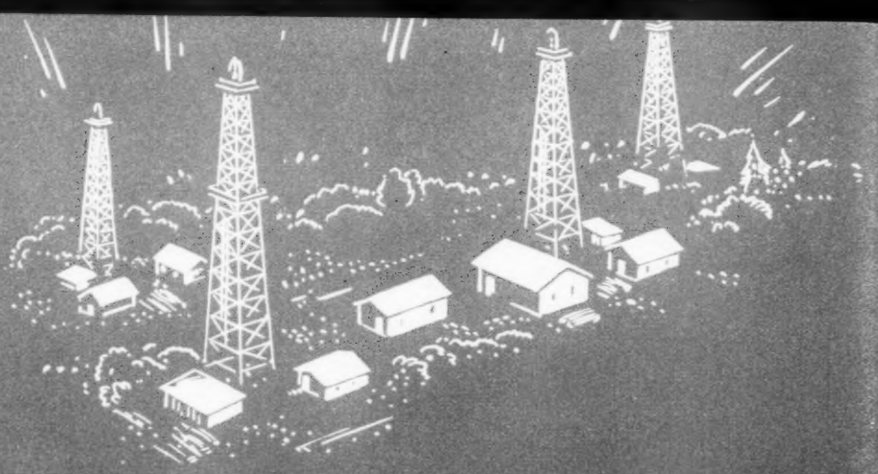
	Oil	Gas	Dry	Total	1937 total comp. to date	1936 total comp. to date
Penna. Grade Fields	49	16	10	75	976	760
Lima Field	0	0	1	1	17	13
Central Ohio	1	11	6	18	225	63
Indiana	0	0	0	0	27	39
Kentucky	0	0	0	0	28	52
Illinois	0	0	0	0	14	12
Michigan	10	3	6	19	201	186
Kansas	49	1	7	57	521	352
Oklahoma	37	3	21	61	658	574
Texas:						
North Central Texas	22	1	21	44	664	637
West Texas	52	0	2	54	622	318
Texas Panhandle	10	4	2	16	156	172
East Texas	43	0	2	45	516	661
East Central Texas	17	0	0	17	170	62
East Texas border	3	0	0	3	103	8
Gulf Coast Texas	24	2	6	32	318	269
Southwest Texas	36	3	16	55	852	655
Total Texas	207	10	49	266	3,401	2,782
North Louisiana	9	2	0	11	104	153
Gulf Coast Louisiana	3	0	2	5	121	100
Total Louisiana	12	2	2	16	225	253
Arkansas	1	0	2	3	28	26
Montana	4	1	0	5	24	28
Wyoming	3	0	0	3	26	21
Colorado	0	0	0	0	6	9
New Mexico	16	0	2	18	198	117
Utah	0	0	0	0	0	4
California	30	1	4	35	346	287
Total United States	419	48	110	577	6,921	5,578
Total previous week	401	44	120	565		
Difference	18	4	10	12		

Outstanding Fields—Highlights

(Week Ending April 3, 1937)

Field—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
Anahuac	2	4	2	222	161	14,486
Hastings	4	10	4	2,317	152	13,687
Loma Novia	2	5	2	115	677	19,940
Seven Sisters	1	4	2	985	388	10,610
Saxet	5	30	2	210	395	36,640
Lopez	3	5	5	1,035	310	9,260
East Texas	65	96	43	1,596	22,413	460,250
Talco	15	43	15	5,319	263	24,953
OKLAHOMA						
Oklahoma City	1	18	1	310	1,103	164,400
Fitts	7	53	10	12,678	673	88,375
Olympic	4	27	6	297	276	14,875
KANSAS						
Ellis County	3	25	2	2,635	83	3,145
Reno County	4	32	2	1,774	384	20,820
Russell County	6	54	8	7,178	631	28,365
Rice County	5	55	21	14,584	760	44,330
NEW MEXICO						
Lea County	22	98	16	3,843	2,067	100,230
LOUISIANA-TEXAS						
Rodessa, La.	1	16	1	150	361	49,500
Rodessa, Tex.	6	43	3	627	248	46,395
Gillis, La.	1	3	2	450	42	5,612
MICHIGAN						
Porter-Yost	2	5	0	0	433	12,950
Buckeye	13	63	6	8,178	28	15,439





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Eastern Field Report

By STAFF CORRESPONDENT

DEEP GAS TEST IN BEAVER COUNTY, PENN., A FAILURE

PITTSBURGH, Pa., Apr. 5.—Another deep test in southwest Pennsylvania proved a failure. In Independence Township, Beaver County, the test of the Laughner Oil & Gas Co. and the American Natural Gas Co. on the William Wilsman farm, drilled 8 feet into the Oriskany sand, found salt water which rose 300 feet in the hole and the bailer has failed to reduce it. The top of the Corniferous lime was at 5,137 feet, and the top of the Oriskany sand at 5,311 feet.

The test is located on Service Creek 1¼ miles from its mouth on Racoon Creek. The Wilsman farm is mapped as the Shannon heirs farm. This test was completed after severe difficulties with gas blowouts in the shales above the Corniferous lime.

The continued center of interest is in the deep test of William Snee and others on the Summit Hotel lease on Chestnut Ridge in South Union Township, Fayette County, Pennsylvania. With the top of the Corniferous lime at 6,575 feet the tools have reached 6,665½ feet and still in lime, but with less Chert. The first gas struck at 6,608 feet, which gauged only 35,000 feet a day, has increased with depth to 700,000 feet a day.

The bit was lost at this final depth due to a broken pin and fishing is in progress but the fishing tools have been unable to reach within 15 feet of bottom and it is believed the bit is either creviced or in a tapered hole.

Speculation still continues as to the source of the gas, whether it is from a reservoir in the Corniferous lime or whether with a good cap seal on this formation, the lower part of the formation has fractured into the Oriskany sand. Added depth will alone find the answer. The gas from the old hole from which the new hole diverged at 4,250 feet is showing a trifle stronger and is over 400,000 feet a day between the 8-inch and 7-inch casings and capped with a bradenhead.

The gas in the new hole was shut in and after 20 hours showed a shut-in pressure of 2,150 pounds and rising. At present it would be possible to use gas from both the sources.

SOUTHEAST OHIO

In Belmont County, southeast Ohio, Frank Stranges and others completed a test on the John Allen farm in section 15, Pease Township, in Salt sand at 1,075 feet as a gas well.

In Licking County, Striker & Armbuster completed No. 7 G. E. Patton, in section 7, Perry Township, in Berea sand at 675 feet. It produced 10 bbls. the first day after shot and will make about a 2½-bbl. pumper.

In Loraine County, the Kemrow Co. completed Nos. 1 and 2 on the Mary Walker 70-acre farm, Lot 79, Columbia Township. The No. 1 gauged 465,000 feet a day from Clinton sand at 2,678 feet and No. 2, 500,000 feet a day from the Clinton at 2,676 feet.

In Medina County, E. R. Edson & Son Co. drilled No. 4 Ray and Cora Koons, Lot 20, Chatham Township, through Berea Grit to 558 feet. It was a dry hole.

In Perry County, the Preston Oil Co. completed a test on the Dora Lones farm, section 31, Hopewell Township, in Clinton sand at 2,975 feet. It has only about 50,000 feet of gas and a small showing of oil and the gas will be saved.

In Vinton County, Powers Oil & Gas Co. completed No. 12 S. Clark near Bollins Mills, section 4, Knox Township, in Berea sand at 1,170 feet. It produced 3 bbls. the first day after shot.

In Washington County, at Bartlett, in section 29, Wesley Township, O. K. Parrett completed a test on the A. A. Goddard farm in the Mahoning sand at 631 feet. It produced 2 bbls. the first day after shot.

SOUTHWEST PENNSYLVANIA

The deep test of the American Natural Gas Co. and T. W. Phillips Gas & Oil Co. on the Perry S. Davis farm, Franklin Township, Butler County, topped Corniferous lime at 5,420 feet and is drilling 55 feet in that formation.

In Mount Pleasant Township, Washington County, Norwood Johnston and others test on the James McBurney farm is fishing for 6,100 feet of cable.

Completions

In Amwell Township, Washington County, Manufacturers Light & Heat Co. deepened No. 5, a gas well, on the A. O. Vankirk farm to 2,813 feet. The top of the Fifty Foot sand was at 2,808 feet with about 10 bbls. a day at 2,814 feet. In this township, the Carnegie Natural Gas Co. deepened No. 1 Menzer to 3,002 feet, the Fifth sand. It is good for 10 bbls. a day at 2,991-2,992 feet. Union Gasoline & Oil Corp.'s test on the C. H. Miles farm got Thirty Foot sand at 2,810 feet with gas at 2,836-2,852 feet and gauged about 1,000,000 feet a day.

In Greene County, B. L. Frye deepened No. 1 Milton Martin in Aleppo Township to 3,445 feet. Gas gauging 376,000 feet a day was found at 3,230-34 feet. The well was shot and the final gauge was 260,000 feet a day.

In Morris Township, Greene County, Dunn Mar Oil & Gas Co. deepened No. 2 J. G. Loughman to 3,254 feet through the Fifth sand and it is a dry hole.

Other Work

In South Franklin Township, Washington County, Carnegie Natural Gas Co. is down 1,458 feet on the C. T. Dodd farm, and 394 feet on the Iams farm. Laock & Co. are deepening on the J. M. Hanna farm. The Dunn Mar Oil & Gas Co. is fishing at 1,825 feet on the J. T. Baldwin farm.

In Richhill Township, Greene County, Burley Wright and others have reached 2,080 feet on the Joseph McCracken farm. In Wayne Township, H. D. Freeland & Co. are drilling by the tools at 2,080 feet in No. 3 Freeland.

In Center Township, Greene County, South Penn Oil Co. is drilling at 2,292 feet on the Charles Harvey farm. Charles Mong and others are down 1,190 feet on the J. L. Metz lease.

In Springhill Township, Greene County, Manufacturers Light & Heat Co. are cementing cave at 1,450 feet on the Lloyd Strope farm. North Eastern Gas Co. is down 1,725 feet in No. 2 J. W. McNichols. The Penn Ohio Oil & Gas Co. has reached 3,215 feet on the H. H. Milliken farm.

In Aleppo Township, Greene County, Ross Burns is drilling at 2,060 feet on the Phillips farm. In Morris Township, Manufacturers Light & Heat Co. has reached 2,460 feet on the W. E. Craft farm.

In Peters Township, Washington County, Carnegie Natural Gas Co. is down 666 feet on the Douglass farm and in Jefferson Township, Fayette County, 890 feet in the No. 2 on the George J. Elliott farm.

WEST VIRGINIA

The best producer for the week in West Virginia was the second test of Glen F. McBurney and others on the M. B. Nutter farm in Clay district, Ritchie County. It was drilled 8 feet in the Maxton sand, depth 1,612 feet, and produced 36 bbls. the first day. The No. 1 was a 2-bbl. pumper.

In Grant district, Ritchie County, Eastern Producers & Refiners Co. completed No. 25 Rutherford Brothers at 2,007 feet, good for 5 bbls. a day from Maxton sand, and 23,500 feet of gas from the Injun sand. In Murphy district, Patterson & Pope deepened No. 3 Harry W. Patterson from 1,550 feet, the gas being exhausted to 1,616 feet and it is showing for 1 bbl. a day.

In Kanawha County, the Pure Oil Co. completed No. 268 Williams Coal Co. lease in Cabin Creek district in Berea sand, total depth 3,244 feet. It is good for 10 bbls. a day.

In Pleasants County, the Grant and Atha Oil Co. completed No. 1 J. D. Smith in Union district in Cow Run sand at 515 feet, for a quarter-barrel pumper. In Grant district, C. L. Barron drilled a No. 7 on the Robert Brothers lease through the Salt sand to 595 feet and it was dry. In Lafayette district, F. M. Clymer & Co. drilled a test on the Allen Powell farm through the Squaw sand to 1,833 feet and it was dry.

In Tyler County, the Crawford Oil & Gas Co. completed a test on the Thomas Moore farm in Union district in Injun sand at a depth of 1,803 feet and it is good for 5 bbls. a day.

Gas Wells

In Boone County, Owens Illinois Glass Co. completed No. 3 G. T. Hill, Washington district, at 2,405 feet. Berea 2,349-73 feet with gas at 2,349 feet. The gauge was 68,000 feet a day and it is reported that an acid treatment increased it to 2,000,000 feet a day. G. L. Ballantine, trustee, completed a test on the Taylor and Shaw lease at a depth of 2,100 feet as a gas well gauging 125,000 feet a day; Berea at 2,047-76 feet with the gas at 2,049-55 feet.

In Calhoun County, the Dunn Mar Oil & Gas Co. completed a well on the P. A. Reip farm in Washington district at 1,927 feet. The Maxton sand was at 1,540-70 feet with gas at 1,560-70 feet. The gas gauged 237,600 feet before shot.

In Gilmer County, the Carnegie Natural Gas Co. completed the second well on the Floyd and Allen lease in Glenville district at 1,597 feet; Big Indian at 1,465-70 feet; gas 1,535-39 feet and gauged 116,000 feet a day after shot. In DeKalb district, Verle Stewart and others drilled No. 2 on the Frank Stalnaker farm through the Injun sand to 1,807 feet and it was dry.

In Jackson County, Boggess & Starcher's test on the E. S. Halbert farm in Washington district

(Continued on Page 77)

Kansas Developments

By
DAL DALRYMPLE

TWO EXTENSIONS AT BEMIS; MANY NEW RICE PRODUCERS

Busy Rice County set a fast pace for Kansas oil fields the past week with 22 wells completed, all but one being producers. The bulk of the new wells were in the Hauschild-Saxman and Silica areas. The productivity record for the entire state compared favorably with that for Rice County, only seven dry holes being recorded, with 49 oil wells and one gas well completed.

Indications were that the Bemis pool, Ellis County, would be extended in two directions by one company Texas Co. No. 1 Bemis B, SW SW NW section 15-11-17w, extended the producing area one-fourth mile north. It topped Siliceous lime at 3,423 feet, total depth 3,426 feet, and produced 290 bbls. of oil in 12 hours. It was reported somewhat lower structurally than other wells in the pool. On the south side of the pool, Texas Co. No. 1 Bemis A, NE cor. section 28-11-17w, found oil saturation in cores at 3,438-45 feet. It was reported high structurally.

Another Siliceous lime producer was near completion in the Shambaugh pool, northwestern Elk County. It was the Clay Petroleum Co. and others No. 5 Shambaugh, CNL SW SW section 21-28-9. It had lime at 2,768-82½ feet and oil rose 2,200 feet in the hole in 2½ hours. Successes in the Shambaugh area and the recent wildcat strike of Alf M. Landon and others at No. 1 McCaig, NE NE SE section 13-28-6, adds considerable interest to a wide area in northwestern Elk, southwestern Greenwood and southeastern Butler counties. The No. 1 McCaig flowed 50 bbls. of oil in 30 minutes at plugged back depth of 2,737 feet, following a shot.

Rice County

A fast pace in drilling operations for Kansas was set by Rice County operators, who completed 26 wells, including only one dry hole. Nine of the new producers were in the Hauschild-Saxman area, with the others in the Silica, Schartz, Chase and Edwards sectors. Completions in the county were as follows:

L. E. Douglass No. 2 Theede, SW NW SW section 9-21-7w; Conglomerate 3,353 feet; total depth, 3,360 feet; flowed 778 bbls. of oil in six hours; potential, 2,950 bbls. Atlantic Refining Co. No. 2 Gossman, SE NE SE section 8-21-7w; Conglomerate, 3,349 feet; total depth, 3,364 feet; flowed 204 bbls. of oil in four hours; potential, 1,137 bbls. Same operator's No. 2 Potts, SE NE SW section 17-21-2w; Conglomerate, 3,359 feet; total depth, 3,401 feet; plugged back to 3,390 feet; shot; potential, 265 bbls. of oil. Same operator's No. 1 Potts, NE NE NW section 17-21-7w; Conglomerate, 3,367 feet; Chat, 3,386 feet; total depth, 3,410 feet; plugged back to 3,395 feet; flowed 60 bbls. of oil in six hours; potential, 227 bbls.

Dick Sage and others No. 2 Gossman, NW SW NW section 9-21-7w; Conglomerate, 3,364 feet, total depth, 3,379 feet; potential, 3,194 bbls. of oil. Reserve Development Co. No. 1 Patton, SW NW NW section 16-21-7w; Conglomerate, 3,371-72 feet, total depth; flowed 1,004 bbls. of oil in six hours; potential, 3,970 bbls.

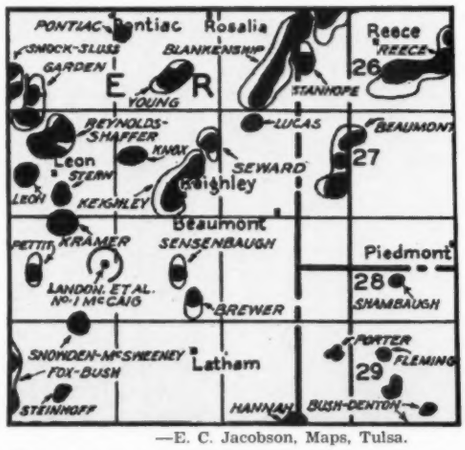
Pryor & Lockhart No. 1 Hannakratt, SE NE SW section 8-21-7w; Conglomerate, 3,341 feet; total depth, 3,375 feet; swabbed 240 bbls. of oil in 12 hours, after shot. Aylward and others No. 4 Johnson, SW NE NE section 17-21-7w; Conglomerate, 3,349 feet; total depth, 3,387 feet; shot; swabbed 60 bbls. of oil in 24 hours, and completed for 15 bbls., as a minimum well. Same operators' No. 2 Johnson, SW NE NE section 17-21-7w; Conglomerate, 3,344 feet; total depth, 3,405 feet; plugged back to 3,389 feet; potential, 15 bbls. of oil.

The Silica Field

Bradley Oil Co. No. 6 Mitchell, NE SE SW section 32-19-10w, Silica area; Siliceous lime, 3,297 feet; total depth, 3,305 feet; potential, 2,196 bbls. of oil. Same operator's No. 5 Mitchell, SW SE SW section 32-19-10w; Siliceous, 3,295 feet; total depth, 3,297 feet; pumped 816 bbls. of oil in nine hours; potential, 2,289 bbls. Skelly Oil Co. No. 2 Dittmers, SW cor. section 28-19-10w; Siliceous, 3,265 feet; total depth, 3,275 feet; acidized; potential, 2,334 feet.

Gulf Oil Corp. No. 1 Steckel, SE NE NE section 31-19-10w; Siliceous, 3,276 feet; total depth, 3,286 feet; acidized; potential, 1,115 bbls. Same company's No. 13 Stolz, Jr., NE NE NW section 5-20-10w; Siliceous, 3,286 feet; total depth, 3,298 feet; swabbed 390 bbls. of oil in five hours; acidized; potential, 1,360 bbls. Same company's No. 14 Stolz, Jr., SE NE NW section 5-20-10w; Siliceous, 3,285 feet; total depth, 3,296 feet; acidized; potential, 1,460 bbls. of oil. Same company's No. 4 Wendell, SE NW SE section 32-19-10w; Siliceous, 3,279 feet; total depth, 3,291 feet; swabbed 146 bbls. of oil in four hours; acidized; potential, 1,186 bbls.

In the Schartz area, Sinclair Prairie Oil Co. No. 3 Proffitt, NE NW NW section 3-20-10w, had Siliceous lime at 3,327 feet; total depth, 3,332 feet; made potential of 1,437 bbls. of oil. Ohio Oil Co. No. 1 Wood, NW NE NW section 3-20-10w; Siliceous, 3,356-59 feet, total depth; pumped 464 bbls. of oil and 34 bbls. of water in 24 hours. Texas Co. No. 5 Kleile, SE SW SW section 34-19-10w; Siliceous, 3,322 feet; total depth, 3,333 feet; pumped 686 bbls. of oil in 19 hours; acidized; potential, 1,501 bbls. of oil, with 12 per cent water.



—E. C. Jacobson, Maps, Tulsa.

New interest was given corners of Butler, Greenwood and Elk counties by A. M. Landon wildcat strike and new Siliceous production in Shambaugh pool

Jack Robertson No. 2 Smith, NE SE SW section 32-19-9w, Chase area; Siliceous, 3,253 feet; total depth, 3,257 feet; acidized; potential, 305 bbls. of oil. Winkler & Koch and others No. 1 Leming, SW SW NE section 24-20-10w; Siliceous, 3,389-3,440 feet, total depth; dry and abandoned.

Empire Oil & Refining Co. No. 9 Janssen A, SW NE NE section 3-18-8w, Edwards area; Siliceous, 3,253 feet; total depth, 3,281 feet; acidized; potential, 290 bbls. of oil, with 1 per cent water.

New work in Rice County: Republic Natural Gas Co. No. 2 Wendell, SW NE SE section 32-19-10w, rigging up rotary; same company's No. 8 Wendell, SE SE NE section 32-19-10w, building rig; Stanolind Oil & Gas Co. No. 3 Panning, NW SE NW section 33-19-10w, rig; Reserve Development Co. No. 3 Patton, NE NW NW section 16-21-7w, rig; same company's No. 4 Patton, SE NW NW section 16-21-7w, moving in material.

Russell County

Nine completions in Russell County included eight producers and only one dry hole. In the Trapp area, Empire Oil & Refining Co. No. 3 Sellens, SE NW SW section 30-15-13w, had Siliceous lime at 3,271-75 feet, total depth, and made potential of 1,776 bbls. of oil.

Shields and others No. 1 Gross, NW NW SE section 5-15-13w, Berrick area, topped Siliceous lime at 3,225 feet; had a hole full of water at 3,244-50 feet, total depth, and was dry and abandoned.

Stearns & Streeter No. 3 Miller, SE NE NW section 31-14-13w, Hall pool, topped Kansas City lime at 2,849 feet; total depth, 2,945 feet; acidized and made potential of 1,242 bbls. of oil.

National Refining Co. No. 2 East Reinhardt A, SW NW NE section 36-14-15w, Harbaugh pool, pumped 310 bbls. of oil in 24 hours from pay at 3,168-75 feet, total depth, 3,179 feet.

British American Oil Producing Co. No. 2 Boxberger, NW NE NE section 33-13-14w, Russell pool, had Siliceous lime at 3,268 feet; total depth, 3,275 feet; swabbed 375 bbls. of oil in 11 hours; acidized and made potential of 1,925 bbls.

In the Gorham-Sullivan area, Central Petroleum Co. No. 2 Foster B, SE SW NE section 3-14-15w, had Gorham sand at 3,295-3,300 feet, total depth; and made potential of 1,695 bbls. of oil. Transwestern Oil Co. No. 2 W. Polcyn, SW NW SW section 11-14-15w, made potential of 688 bbls. of oil from Gorham sand at 3,260-63 feet, total depth. Same company's No. 5 Helen Polcyn, SE NE SE section 10-14-15w, had sand at 3,243-44 feet, total depth, and made potential of 686 bbls. of oil. Gulf Oil Corp. No. 3 Pierce, SW NW SE section 2-14-15w, made potential of 404 bbls. of oil from Gorham sand at 3,298 feet; total depth, 3,306 feet.

First reports of new work in Russell County: Central Petroleum Co. No. 3 Deckert, SW NE NW section 30-12-15w, rig; same company's No. 3 Foster B, SW SE NE section 3-14-15w, cleaning out to deepen; same company's No. 5 Foster B, NE SE NE section 3-14-15w, location; Phillips Petroleum Co. No. 2 Downing, SW SE SW section 19-13-14w, building rig; British American Oil Producing Co. No. 3 Boxberger, SW NE NE section 33-13-14w, location; Smoky Hill Oil Corp. No. 6 Miller, SE NW NE section 31-14-13w, drilling at 325 feet; Sinclair Prairie Oil Co. No. 2 Berrick, SE SW SE section 23-15-13w, location; W. I. Southern, Inc. No. 7 Boomhower, SE SW NW section 32-15-13w, location; Sinclair Prairie Oil Co. No. 2 Sellens, SE SE NW section 36-15-13w, location.

Ellis County

Empire Oil & Refining Co. No. 4 Bemis, SE cor. section 21-11-17w, Bemis pool, Ellis County, made potential of 2,500 bbls. of oil. It topped Siliceous lime at 3,390 feet and was bottomed at 3,414 feet.

Wolf Creek Oil Co. No. 1 Dreiling, NW NW SW section 4-12-17w, Shutts area, had Siliceous lime at 3,526 feet; total depth, 3,531 feet; swabbed 135 bbls. of oil in four hours and pumped 1,296 bbls. of oil in 21 hours and 40 minutes.

Empire Oil & Refining Co. No. 1 Hall, SE cor. section 2-12-17w, wildcat, topped anhydrite at 1,300 feet; Conglomerate, 3,671 feet; Siliceous lime, 3,697 feet; had a hole full of water at 3,704 feet, total depth, and was dry and abandoned.

New work in Ellis County: Elwell & Trees Oil Co. No. 1 Wickham, SW SW NE section 10-11-19w, wildcat, location; Darby Petroleum Corp. No. 1 Solomon, NW NW NE section 33-11-19w, moving in material; British American Oil Producing Co. No. 6 Bemis, SE NW SW section 22-11-17w, cellar; same company's No. 7 Bemis, NE SW SW section 22-11-17w, building rig; same company's No. 8 Bemis, SE SW SW section 22-11-17w, building rig; Deep Rock Oil Corp. No. 2 Baumer, NE NW NW section 27-11-17w, rig; Lario Oil & Gas Co. No. 2 Walter B, SE SE SW section 2-12-18w, building rig; same oper-

ator's No. 2 Walter C, SW SW SE section 2-12-18w, moving in material; Wolf Creek Oil Co. No. 1 Bemis A, section 4-12-17w, location; Billings No. 1 Smith, SE SE NW section 14-12-16w, wildcat, location.

Estimated Daily Production

Estimated daily average production of Kansas for the week ending April 3, and for the preceding week, was as follows:

	Barrels	
	April 3	Mar. 27
Oxford City	2,675	2,725
Burrton	16,375	16,225
Ritz-Canton	5,400	5,450
Graber	2,800	3,125
Hollow-Nikkel	4,075	4,125
Voshell	3,000	2,950
Wellington	2,975	2,875
Ellsworth County:		
Lorraine-South Lorraine	5,350	5,000
Other pools	1,505	1,258
Rice-Barton counties:		
Bloomer	3,200	3,243
Chase	10,275	9,170
Geneseo	2,525	2,860
Raymond	2,150	2,455
Silica	17,800	19,025
Keesling	1,925	2,095
Hauschild	3,000	2,720
Miscellaneous Rice	6,655	6,738
Miscellaneous Barton	5,655	6,437
Russell County:		
Fairport	2,540	2,550
Gorham-E. Gorham	3,605	3,130
Russell	1,930	2,705
Sullivan	5,705	4,110
Trapp	6,560	7,030
Miscellaneous Russell	8,025	5,025
Sedgwick County:		
Valley Center	1,300	1,320
Greenwich	1,280	1,305
Miscellaneous	2,125	2,200
Ellis County:		
Bemis	1,250	3,800
Miscellaneous Ellis	1,895	1,515
Kingman County	875	686
Stafford County	2,565	2,853
Greenwood County	9,750	9,250
Butler County	17,650	17,600
Other fields	24,780	23,095
Total Kansas	189,175	183,650

Reno County

Indian Territory Illuminating Oil Co. No. 1 Mueller, NW NW NE section 30-24-4w, Haven-Burrton area, Reno County, topped Chat at 3,332 feet; total depth, 3,380 feet; flowed 805 bbls. of oil in 24 hours; acidized and made potential of 1,020 bbls.

Wilcox Oil & Gas Co. No. 1 Montford, NW NE SW section 12-23-4w, had Chat at 3,268 feet; total depth, 3,432 feet; perforated casing, acidized and made potential of 969 bbls. of oil.

Wilcox Oil & Gas Co. No. 2 Montford, NE NW SW section 12-23-4w, was a rig. National Petroleum Co. No. 2 Tucker, NW NW NE section 19-24-4w, was moving in material.

McPherson County

A quartet of producers was completed in the Graber pool, McPherson County. Continental Oil Co. and others No. 6 Hetzke, SE NE NE section 29-21-1w, topped Hunton lime at 3,267 feet; total depth, 3,316 feet; acidized and made potential of 692 bbls. of oil. Same company's No. 5 Hetzke, SE NE NE section 29-21-1w, pumped 443 bbls. of oil in 12 hours and made potential of 900 bbls. of oil. Top of Hunton lime was 3,302 feet; total depth, 3,340 feet.

Ohio Oil Co. No. 9 Decker, SW NW SE section 20-21-1w, had Hunton lime at 3,296 feet; total depth, 3,310 feet; acidized, pumped 196 bbls. of oil in 24 hours and later made potential of 312 bbls. Derby & Wentz No. 1 Arnold, SE SE NW section 16-21-1w, had Hunton lime at 3,317 feet, was bottomed at 3,348 feet and plugged back to 3,329 feet. It made potential of 405 bbls. of oil, with 255 bbls. of water.

Kansas City Production Co. No. 1-A Severtson, C E half NE SE section 9-19-2w, was moving in material. Magnolia Petroleum Co. No. 1 Klassen, NW NE NW section 21-19-1w, an old well, was rigging up to deepen.

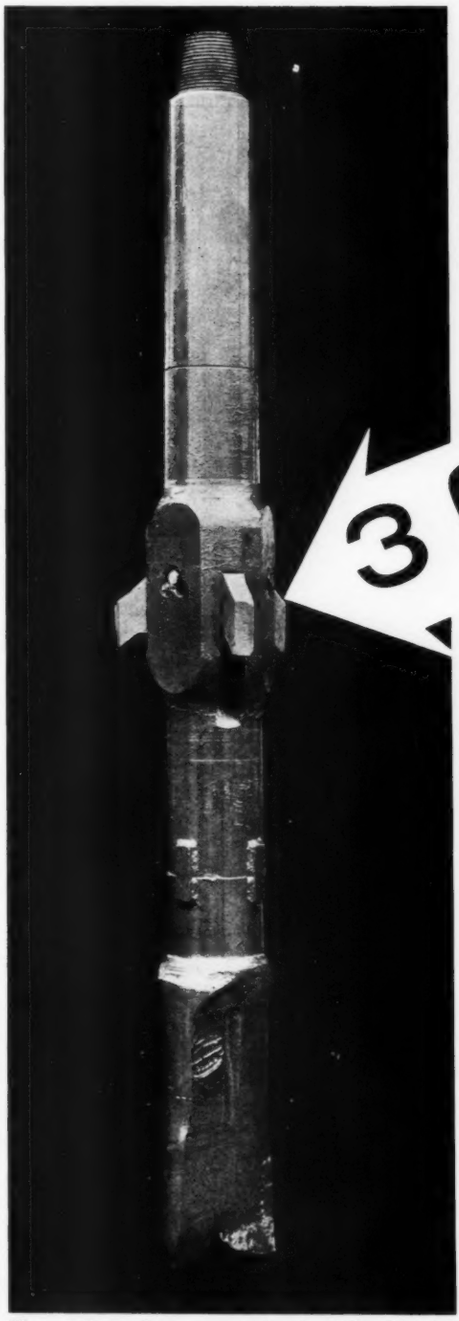
Barton County

The Texas Co. No. 6 Bloomer, SE NE NE section 36-17-11w, Bloomer pool, Barton County, topped Siliceous lime at 3,272 feet, was bottomed at 3,286 feet; treated with 1,000 gallons of acid, and made potential of 1,513 bbls. of oil, with 2 per cent water.

Empire Oil & Refining Co. No. 1 Meier, SE SE SW section 9-16-13w, Susank area, made potential of 1,114 bbls. of oil, with 371 bbls. of water, after acidizing. It topped Siliceous lime at 3,383 feet and was bottomed at 3,389 feet.

New work in Barton County: Stanolind Oil & Gas Co. No. 1 Panning, SW SW SE section 2-20-11w, location; same company's No. 1 Meggars, SW cor. section 21-20-11w, wildcat, rig; Magnolia Petroleum Co. No. 5 Roetzel, SE NW NE section 24-20-11w, moving in material; Stano-

LESS LOAD PER CUTTER
MORE HOLE PER RUN!



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KEEP PURE DRINKING WATER ALWAYS HANDY

FREE! 2 NASH 8's
20 RCA Victor Auto Radios — EVERY WEEK

in the SINCLAIR-"BABE" RUTH BASEBALL CONTEST

Last Fall, the Sinclair-"Red" Grange Football Contest swept the country. More than 43 million entry blanks were distributed by Sinclair dealers. Sales hit record highs.

And now Sinclair announces a new contest, the Sinclair-"Babe" Ruth Baseball Contest. 2 Nash "8's", 20 RCA Victor Auto Radios and 500 Spalding Official National League Baseballs "'Babe' Ruth autographed", will be given away each week.

To smash this contest across, "Babe" Ruth goes on the air twice each week over 61 CBS stations—11,500 billboards go up in the vicinity of Sinclair dealers' stations—newspaper ads will appear twice a week—ads will run in Saturday Evening Post, Time, Collier's, Life, and Field & Stream—and, last but not least, every Sinclair dealer gets colorful posters and displays for his station.

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SINCLAIR

lind Oil & Gas Co. No. 1 Struder, SE SE SW section 26-16-13w, wildcat, location; Texas Co. No. 8 Bloomer, NE cor. section 36-17-11w, rig; Spencer & Yarnell No. 1 Patzner B, NW NW SW section 31-17-10w, cellar; S. E. Bailey No. 1 Hammeke, NE NE SW section 12-18-12w, an old wildcat being deepened, drilling at 1,500 feet.

Rush County

Morgan & Flynn No. 2 Koril B, SE NE SW section 23-18-16w, Otis area, Rush County, flowed 37 bbls. of oil in one hour and made potential of 467 bbls. of oil, with 45,000,000 feet of gas daily. It topped La Motte sand at 3,487 feet, and was bottomed at 3,547 feet.

Duwe & Brouk No. 1 Lebsack, SE SE NE section 13-16-16w, Rush County wildcat, was moving in material. Morgan & Flynn No. 3 Koril B, C N half SW section 23-18-16w, and No. 2 Schroeder, NW NW NE section 26-18-16w, were locations.

Stafford County

Stanolind Oil & Gas Co. and others No. 6 Heyen B, NW NW NE section 31-22-11w, Richardson area, Stafford County, found Siliceous lime at 3,529 feet; total depth, 3,560 feet, and made potential of 1,532 bbls. of oil.

Stanolind Oil & Gas Co. No. 7 Heyen B, NE cor. section 31-22-11w, only new test in Stafford County, set casing at 225 feet.

Ellsworth County

Carter Oil Co. and others No. 8 Ogden, C-39, NW SW SW section 26-17-9w, Lorraine pool, Ellsworth County, had Siliceous lime at 3,168 feet; total depth, 3,181 feet; pumped 182 bbls. of oil in 12 hours; acidized, and pumped 965 bbls. in 24 hours.

Harvey County

Shell Petroleum Corp. No. 1 Balzer-Siemens, C W half W half NE section 8-22-3w, Hollow-Nikkel area, Harvey County, topped Hunton lime at 3,522 feet; total depth, 3,558 feet; plugged back to 3,540 feet; shot, and pumped 35 bbls. of oil and 5 bbls. of water in 17 hours; later, pumped 20 bbls. of oil and 60 bbls. of water in 24 hours; acidized, and pumped 2½ bbls. of oil and 5 bbls. of water in 24 hours.

Trego County

Black Gold Oil Co. No. 1 Allman, C SW SW section 34-14-21w, Trego County wildcat, topped Topeka lime at 3,120 feet; Dodge, 3,435 feet; Kansas City lime, 3,485 feet; Siliceous lime, 3,890 feet; total depth, 3,990 feet, and was dry and abandoned.

Meade County

Pacific Midwest Co. No. 1 Rexford, NE SE SW section 8-30-29w, Meade County wildcat, was an abandoned location.

Marion County

Rickey and others No. 1 Propp, NW SW SW section 8-19-4e, was a rig for a new test in Marion County.

Butler County

Empire Oil & Refining Co. No. 17 Lathrop, SE SE NW section 17-23-4, Elbing area, Butler County, topped Kansas City lime at 1,935 feet; total depth, 2,074 feet; acidized and pumped 135 bbls. of oil and 35 bbls. of water in 24 hours.

New operations in Butler County: Aylward and others No. 1-A Glancey, SW NW SW section 10-26-3, rigging up machine; Saco Oil Co. No. 3 Brainerd B, C E half E half SW section 35-24-3, drilling at 500 feet; Roth & Faurot and others No. 2-A King, C S half NE SW section 17-24-4, drilling at 90 feet.

Coffey County

Johnson and others No. 5 Vannocker, NE NW NE section 12-23-14, Coffey County, topped lime at 1,512 feet; was bottomed at 1,629 feet; acidized and pumped 5 bbls. of oil in 24 hours.

W. E. Ellis No. 1 Hannan, SE SW SE section 11-23-14, was rigging up machine.

Woodson County

Oko Oil Co. No. 2 Weidie, SW NW SW section 32-23-15, Woodson County, had lime at 1,548 feet; total depth, 1,563 feet; acidized and pumped 40 bbls. of oil in 24 hours. Same company's No. 4 Hoagland, SW SE SE section 35-23-14, pumped 40 bbls. of oil in 24 hours after acidizing lime topped at 1,607 feet; total depth, 1,630 feet.

Harper and others No. 1 Weidie, SE SE NE section 10-24-14, wildcat, topped Siliceous lime at 2,025 feet and was dry and abandoned at 2,046 feet, total depth. Ward

McGinnis No. 3 Weidie, SE SE NE section 31-23-15, topped lime at 1,548 feet, had a hole full of water at 1,625 feet, total depth, and was dry and abandoned.

New work in Woodson County: Harper and others No. 1 Miller, NW NE SE section 10-24-14, wildcat, spudded; Reed and others No. 1 Piper, NW NW SE section 19-23-15, wildcat, topped lime and set casing at 1,535 feet, and was waiting at 1,537 feet; Higgins and others No. 1 Harding, C S half SE SW section 29-23-15, drilling at 500 feet; Ward McGinnis No. 4 Weidie, NE SE SE section 31-23-15, rigging up machine; Katz and others No. 1 Guy, SW SW SE section 6-24-15, wildcat, rigging up machine.

Chautauqua County

Barbara Oil Co. No. 1 Gormain, SE SE NW section 23-32-10, Chautauqua County, topped lime at 1,911 feet; was bottomed at 1,942 feet; pumped 16 bbls. of oil in 24 hours; acidized, and pumped 100 bbls. of oil in 24 hours.

Elk County

Diller Oil & Gas Co. No. 2-A Key, C SW NW section 25-31-10, Key pool, Elk County, was a cellar.

Sumner County

Texas Co. No. 3 Carr, NE NW NE section 5-32-1w, Wellington field, Sumner County, topped Chat at 3,661 feet; total depth, 3,692 feet; acidized, pumped 300 bbls. of oil in 20 hours and made potential of 330 bbls.

Shell Petroleum Corp. No. 1 Nevitt, SW NE SW section 14-32-2e, Oxford area, topped Granite at 3,951 feet; total depth, 4,000 feet, and was completed as a water disposal well.

Orcutt & Stewart No. 1 Newton, SE cor. section 21-30-2e, an old wildcat, was deepened from 550 feet to 930 feet, and was dry and abandoned.

Fancher and others No. 1 Nevitt, NE NW NE section 36-32-2e, an old wildcat bottomed at 3,570 feet, drilled out to 2,875 feet and pumped 4 bbls. of oil a day and 1 bbl. of water an hour.

Cowley County

E. B. Shawver No. 1 Mulkay, SW NE SE section 5-34-3, Cowley County, was a cellar.

Stevens County

McKnabb Oil & Gas Co. No. 2 Hallock, C SE section 36-33-39w, Hugoton area, Stevens County, was bottomed at 2,660 feet, and produced 5,500,000 feet of gas.

Hamilton County

Denver Producing & Refining Co. and others No. 1 Porter, SW SW NE section 30-25-41w, wildcat, was a location. It is the farthest west test in Kansas, Hamilton County bordering on Colorado.

Eastern Fields

(Continued from Page 73)

was dry in Salt sand. In this distrit, the Lima Gas Co. drilled a test on the B. F. Litton farm through the Salt sand to 1,580 feet and it was dry.

In Marshall County, Guy B. and A. C. Pattersonson deepened No. 2 on the Gibson and Patterson farm in Liberty district to the Fourth sand, depth 3,325 feet, and it is good for 500,000 feet of gas a day and 4 bbls. of oil.

In Ritchie County, John Trexler and others completed a test on the M. L. Arlington Corbin farm in Clay district at 1,740 feet, the Keener sand and it is a gas well gauging 116,000 feet a day. In Murphy district, W. A. Bickerstaff completed a test on the Alice Summers farm in the Injun sand, total depth 2,500 feet, and it is a small gas well.

In Wetzel County, the Manufacturers Light & Heat Co. drilled a dry hole on the Catherine Kelly farm in Proctor district through the Fifth sand to 3,310 feet. In this district, the Carnegie Natural Gas Co. drilled on the Fred Hermann farm to 3,487 feet and the hole was dry.

Oriskany Field

In Malden district, Kanawha County, United Fuel Gas Co. completed No. 4679 Georges Creek Land & Mining Co. lease at 4,998 feet, Oriskany sand. It is a gas well gauging 2,986,000 feet a day.

In Elk district, the Columbian Carbon Co. is drilling in on the Ida Hughart farm and at 5,041 feet there is a volume of 1,000,000 feet of gas a day. The West Virginia Gas Corp. topped Corniferous lime at 4,726 feet in the test on the E. E. Walker farm.

Several new locations were made. In Union district, the Glen Oil & Gas Co. made a location on the Virginia Joint Stock Land Bank 1¼ miles west of the town of Wallace and 3 miles southwest of the good gas well on the B. F. Corke farm. The elevation is 820.6 feet. In Union district, Godfrey L. Cabot, Inc., located No. 1 C. W. Richardson, about three-quarters of a mile north of South Charleston but this will be a shale well.

In Malden district, Godfrey L. Cabot, Inc., made a location on the Nellie B. Tompkins 78-acre tract 2,720 feet west of No. 4 on the adjoining Tompkins farm. The elevation is 615.51 feet. In Elk district, the Columbian Carbon Co. will drill on the Samuel G. Jones farm just south of the Octavia Pauley farm.

In Poca district, G. W. Lapiere reached the top of the Corniferous lime on the J. W. Legg farm at 4,674 feet. Godfrey L. Cabot, Inc., is building rig on the J. E. and M. D. Good farm south of Sissonville. The South Penn Oil Co. is spudding on the T. H. Newhouse farm.

New Work

In Boone County, the Ballard Gas Co. made a location on the Ira White, guardian, lease in Washington district. The elevation is 721.6 feet and it is just south of Turtle Creek. In Calhoun County, the Richter Oil Co. has a location for No. 3 Octavia Elliott heirs in Sheridan district.

In Lincoln County, Huntington Development & Gas Co. will drill No. 5 Rochester Coal Co. in Sheridan district. In Marion County, Owens Illinois Glass Co. has a location on the R. C. Brook farm in Fairmont district.

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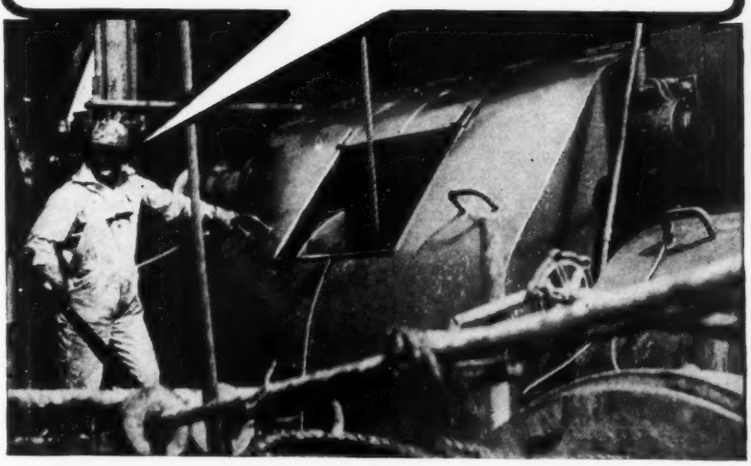

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East and East Central Texas

By L. E. BREDBERG

WOODBINE TEST IN HOUSTON COUNTY SHOWS OIL IN CORES

DALLAS, Tex., Apr. 5.—One of the most closely watched areas in the East Texas district is the Grapeland area in northern Houston County where a couple of tests are being drilled and one gas well has been developed. The Placid Oil Co. (H. L. Hunt) and others No. 1 J. E. Elliott, in the J. Procella Survey, 5½ miles northeast of Grapeland, was given a drill stem test at 5,879 feet and showed four joints (80 feet) of high gravity oil and 20 joints (400 feet) of salt water. It is coring ahead at 5,935 feet according to the latest report. If more oil is not picked up in the deeper cores, pipe will no doubt be set and perforated where the above oil showing was found, with the possibility that some kind of an oil producer will be made, which would mean a new Woodbine sand discovery. The Shell Petroleum Corp. farmed out acreage for this test, and still holds a large block to the west and north of it. Shell will no doubt drill several tests on its block in the near future.

Northwest of the town of Grapeland, the American Liberty Oil Co. is preparing to complete its second gasser in an area in which it discovered gas and distillate a few months ago. This test is located about a half mile southwest of the discovery well and is down 6,300 feet, contract depth, with casing cemented and the well ready to be completed. It topped the Woodbine at 6,018 feet.

Coring

Tide Water Associated Oil Co. and Humble Oil & Refining Co. are coring below 6,080 feet in No. 1 McElreath & Suggett, a wildcat on the Opelika structure, in Henderson County. This is an important Trinity test. It logged Paluxy at 6,005 feet, according to one report, and 6,038 feet according to another report. It is in the W. P. Wyche Survey, 1½ miles northwest of Opelika.

Interesting Location

W. P. Chandler and others have made location for an interesting Mexia-Talco Fault Line test 10 miles southwest of the town of Sulphur Bluff and in Hopkins County. It is on the J. M. Hargroves farm in the G. Linceum Survey and will seek production from the Paluxy, from which sand production is coming in the Sulphur Bluff field, 2½ miles south of the town of that name.

Another test for that area will be drilled by Dilworth Hager, codiscoverer of the Sulphur Bluff field, who has assembled a block between that field and Hatchetville. The location will be about 3 miles southwest of the nearest production in the field, and along the fault.

Trinity Test in Rusk

Another Trinity series test for the East Texas district will be that of John G. Mayo of Houston on the Mrs. Adelia Sandford lands in the W. A. Corder Survey. This location is on the east end of the Mount Enterprise structure on which an 8,000-foot dry hole was drilled by the Pure Oil Co. last year, 4 miles west of this Mayo location. The Mount Enterprise structure was one of the most highly prized in the district until the dry hole was drilled last year.

Talco Field

There were 15 wells completed in the Talco field in the past week with only seven new locations reported. During this period the field produced over 23,200 bbls. per day but was to be curtailed April 1 to 19,169 bbls.

In the Sulphur Bluff field, 18 miles southwest of the Talco field, and in Hopkins County, the Normandie Oil Co. has been formed to develop and operate the Walter Goldston leases and will also operate the 10-mile 8-inch pipe line just completed to a point near Saltillo on the Cotton Belt Railroad to the south. A 20-car loading rack has been erected at that point and oil is being shipped to Houston.

Two new producers were completed in the Sulphur Bluff field, both good wells, one making 1,080 bbls. in 24 hours and the other 704 bbls. in 24 hours through one-quarter inch choke, both flowing. All the wells completed in the Talco field, in contrast to the Sulphur Bluff wells, were pumpers, with the exception of one. One well made as high as 35 per cent salt water when completed. This was Magnolia Petroleum Co. No. 6 Carr, located in the M. V. Delgado Survey.

EAST CENTRAL TEXAS COMPLETIONS

Gregg County

C. K. Atkisson No. 3 Skipper, 3,542-48 feet, 36 bbls. per hour. Atlantic Refining Co. No. 8 Castleberry, 3,601-3,745 feet, 98 bbls. per hour; No. 11-B Nicholson, 3,593-3,645 feet, 42 bbls. per hour. Barnsdall and Sun Oil Co. No. 15 Bingham, 3,520-25 feet, 15 bbls. in 15 minutes; No. 16 Bingham, 3,507-16 feet, 20 bbls. in 15 minutes. Gilcrease Oil Co. No. 8 Christian, 3,585-3,612 feet, 21 bbls. in 20 minutes. Humble Oil & Refining Co. No. 9 Christian, 3,628-3,746 feet, 65 bbls. per hour. T. D. Humphrey No. 9 Branson, 3,614-34 feet, 28 bbls. per hour. J. Long Drilling Co. No. 7-C Owens, 3,641-54 feet, 21 bbls. in three hours on pump. Magnolia Petroleum Co. No. 8 Tate, 3,434-52 feet, 80 bbls. per hour. Monday Oil Co. No. 8-C Harris, 3,491-3,565 feet, 23 bbls. in four hours on pump. National Oil & Grease Co. No. 8 Blackstone, 3,576-3,600 feet, 50 bbls. per hour. Shell Petroleum Corp. No. 9 Moore, 3,539-95 feet, 2 bbls. in 15 minutes. Sinclair Prairie Oil Co. No. 19 York, 3,565-66 feet, 20 bbls. in 15 minutes. Tide Water Associated No. 41 Lake Devernia, 3,485-3,525 feet, 13 bbls. in 10 minutes. United East & West Oil Co. No. 12 Walker, 3,602-03 feet, 30 bbls. per hour. Baggett and others No. 4 Culver, 3,507-25 feet, 20 bbls. in four hours on pump. Gulf Oil Corp. No. 19 Strong, 3,693-97 feet, 65 bbls. per hour. Potter Brothers No. 2 Culber, 3,510-30 feet, 20 bbls. in two hours on pump. Shell Petroleum Corp. No. 6 Elder, 3,534-49 feet, 30 bbls. per hour; No. 9 Neal, 3,541-95 feet, 45 bbls. in 40 minutes. Sun Oil Co. No. 27 Hilburn, 3,635-37 feet, 37 bbls. per hour. Texas Co. No. 13 Dickson, 3,587-3,600 feet, 75 bbls. per hour. Tide Water Associated No. 31 Hughey, 3,495-3,545 feet, 60 bbls. per hour. Wise & Jackson No. 2 Dickey, 3,692-93 feet, 20 bbls. per hour. Zenith Oil Corp. No. 3 Crews, 3,719-20 feet, 45 bbls. per hour.

Rusk County

Gulf Oil Corp. No. 9 Terrell, 3,615-19 feet, 30 bbls. per hour through three-quarters inch choke. J. C. Hawkin No. 2 Hedge, 3,539-3,650 feet, 20 bbls. daily on pump after shot. Houston Oil Co. No. 6-B Bean, 3,576-3,636 feet, 40 bbls. per hour. Stanolind Oil & Gas Co. No. 10 Beall, 3,663-64 feet, 20 bbls. per hour; No. 6 Terrell, 3,622-24 feet, 64 bbls. per hour. Atlantic Refining Co. No. 13-C Pinkston, 3,576-3,655 feet, 20 bbls. per hour. Gant and others No. 13 Hale, 3,540-50 feet, 15 bbls. per hour. Gulf Oil Corp. No. 15 Stone, 3,786-91 feet, 40 bbls. per hour through three-quarters inch choke. Hunt Oil Co. No. 10 Wooley, 3,718-88 feet, 20 bbls. in 20 minutes. Jaggers & Taylor No. 1-A Dickerson, 3,565-3,605 feet, 38 bbls. per day on pump. Stanolind and others No. 72 Siler, 3,654-79 feet, 45 bbls. in six hours on swab. Tide Water Associated No. 12 Pool, 3,690-3,737 feet, 35 bbls. in 30 minutes. Venable & McClanahan No. 46 Birdwell, 3,598-3,606 feet, 100 bbls. per hour.

Upshur County

Barnett Petroleum Co. No. 4-A Cannon, 3,683 feet, dry and abandoned. Bell, Inc., and others No. 1 Moore, 3,774-85 feet, dry and abandoned. Humble Oil & Refining Co. No. 7 Smith, 3,658-3,707 feet, 58 bbls. per hour. Looney & Singen No. 4 Shelton, 3,736-39 feet, 20 bbls. per hour. Manziel and others No. 2 Gillespie, 3,695-96 feet, 15 bbls. per hour on pump. P. H. Pewitt No. 3-B Sobey, 3,669-70 feet, 30 bbls. per hour. J. K. Wadley No. 5-A Gillespie, 3,704-06 feet, 20 bbls. per hour.

Miscellaneous Completions in East Texas

Franklin County

Byrd-Frost, Inc., No. 2 Phillips, 4,312 feet, 10 bbls. per hour on pump. Housh & Thompson No. 6 Ownings, 4,315 feet, 514 bbls. in 24 hours. Goldston and others No. 12 H. J. Smith, 4,494 feet, 704 bbls. in 24 hours, through one-quarter inch choke. F. D. Jones Drilling Co. No. 6 Pierce, 4,481-4,519 feet, 45 bbls. per hour.

Titus County

Adams & Lyle No. 1 Davis, 4,337 feet, 20 bbls. per hour on pump. Byrd-Frost, Inc., No. 3 Belcher, 4,270 feet, 20 bbls. per hour on pump; No. 3 Harper, 4,227 feet, 364 bbls. in 24 hours. W. B. Hinton and others No. 2 Davis, 4,166-4,330 feet, 330 bbls. in 24 hours on pump; No. 9 Hargrove, 4,310 feet, 13 bbls. per hour through one-quarter inch choke. Humble Oil & Refining Co. No. 2 Belcher, 4,335 feet, 380 bbls. in 24 hours on pump; No. 1 Edwards, 4,325 feet, 377 bbls. in 24 hours; No. 2 Riddle, 4,340 feet, 243 bbls. in 24 hours on pump. Magnolia Petroleum Co. No. 6 Carr, 4,285 feet, 271 bbls. in 24 hours, 35 per cent water. R. E. Moore, Trustee, No. 1 Edwards, 4,301 feet, 20 bbls. per hour on pump. J. S. Rushing No. 4 Mitchner, 4,247 feet, 108 bbls. in 18 hours on pump. Tide Water Associated No. 2 Wilson, 4,335 feet, 5 bbls. per hour. W. M. White No. 1 Unsel, 4,200-97 feet, 5 bbls. per hour on pump.

New York-Pennsylvania Gas Fields

COUDERSPORT, Pa., Apr. 5.—For the third time in as many weeks a deep sand test in Warren County, Pennsylvania, was abandoned when the Potter Development Co. quit drilling its well on the Lessor & Launer farm, Kinzua Township, at 4,928 feet.

This well had a showing of 116,000 feet per day when it was drilled into the Oriskany at 4,711½ feet. This showing failed to increase after a 35-quart shot and the hole was deepened without any additional flow.

G. L. Cabot, Inc., completed its well on the Lee Harder No. 2 farm in Alma Township, Allegany County, New York, with an initial gauge of 27,000,000 feet per day and an initial rock pressure of 1,540 pounds.

This well topped the Oriskany sand at 4,681 feet and encountered the first show of gas at 4,686 feet. At 4,690 feet this flow had increased to 19,000,000 feet and at 4,690 feet increased to 24,000,000 feet.

Kaufman and others' well on the Bank Angelica property in Allen Township, Allegany County, New York, found a show of Oriskany sand at 3,376 feet and may go to the Medina. It is temporarily shut down at 3,384 feet. This well topped the Tully at 2,742 feet and the Onondaga at 3,260 feet. The elevation is 2,006 feet.

Pennsylvania Operations

Potter Development Co. is drilling at 5,155 feet on the Crawford Estate property in Keating Township, Potter County, and is shut down at 5,096 feet on the L. C. English farm, Harrison Township, and running pipe. Potter Development is also moving in on the May C. Haupt farm in West Branch Township.

In other Potter County operations, Ward Wasson is shut down at 5,310 feet on the W. B. Hall farm, Genesee Township, and G. L. Cabot, Inc., is drilling at 4,760 feet on the R. E. Courtwright farm, Harrison Township. The elevation of the Cabot well is 2,083 feet.

Three tests are drilling in Tioga County: G. L. Cabot, Inc., at 975 feet on Union Joint Stock Land Bank farm, Brookfield Township, and Potter Development Co. at

(Continued on Page 98)

North Louisiana, Arkansas

LISBON FIELD IN LOUISIANA STATE'S MOST ACTIVE FIELD

By MITCHELL TUCKER

SHREVEPORT, La., April 5.—The Lisbon oil field of Claiborne Parish took on major activity last week following the completion of three wells with an aggregate initial production of about 2,000 bbls. As a result, 15 new wells are now either rigging up or drilling, and Lisbon is the site of North Louisiana's most active oil boom. Attractive showings in deep Travis Peak tests of the Rodessa structure also provided excitement during a very busy week in the Ark.-La.-Tex. area. Good possibility of opening a new oil field on the northern flank of Sugar Creek gas field added to important developments.

Rodessa Travis Peak Tests

R. W. Norton No. 1 Payne, C SE SE section 27-23-16, a proposed 10,000-foot test south of the Rodessa surface fault and in the gas producing area, is now coring near 8,800 feet after having reportedly encountered attractive showings just above this depth. As a result, a very active leasing campaign is now underway along the strip generally considered nonproductive south of the Rodessa townsite. Operators have both tubing and casing on the ground, and the unconfirmed report is that casing will be run soon and tubing run for testing.

On the Louisiana side of the field, Marr & Perkins' deep Travis Peak test of No. 5 Hunter, section 13-23-16, Oolitic lime (Pettit) was cored with a showing of oil at 6,545-55 feet, porosity 16 per cent. Owners plan to core deeper before testing, and operations are now below 6,700 feet.

In the Cass County portion of Rodessa, United Production Co. No. 1 J. W. Land, R. Potter Survey, is serving as the Travis Peak test for that vicinity. At 6,450 feet drill stem test was made of a porous section, and at 6,390-6,428 feet the stem filled 150 feet with mud in 14 minutes. At a total depth of 6,564 feet, the hole is being underreamed preparatory to setting casing. Operators plan to await results from other deep tests before continuing drilling here.

North Rodessa

Three new locations were staked in the North Rodessa sector as Standard Oil of Louisiana tested its No. 2 Armistead, SE SE SW section 4-23-16, which is showing for a good producer.

Marion County

The Jefferson-Rodessa fault system area in Marion County, Texas, 9 miles southwest of oil production in the Rodessa field, proved productive of gas and distillate last week in the completion of Bauman, Dunn & Fisher No. 1 Chatten, A. D. Los Santos Coy Survey. Topping the Hill sand at 5,804 feet, and the Gloyd at 5,898 feet, the well was washed in at total depth of 5,955 feet, and yielded an estimated 50,000,000 feet of wet gas, casing pressure 1,200 pounds, tubing pressure 700 pounds.

The Arkansas-Louisiana Gas Co. No. 1 Laura McIntosch, William Edminston Survey, another key well in proving up the 12-mile strip from Rodessa production to Jefferson, Texas, is at the critical testing point as operators plan to drill plug after setting 7-inch casing at 5,952 feet, total depth 6,101 feet. The Hill sand was topped at 5,836 feet, the Gloyd at 5,933 feet, each carrying saturation in formation about 18 per cent porous.

The Hunter Co. of Shreveport has staked location in this same survey for No. 1 Fonda, and is now moving in materials and rigging up.

The Jefferson discovery well, Holcomb & Thomason, Hootkins & Flesh No. 1 Lizzie Henderson, R. Bennington Survey, is flowing and testing through various sizes and types of chokes. Tubing and packer were pulled; 7-inch casing reperforated with 10 shots from 5,982-86 feet and with 29 shots from 6,012-22 feet; tubing reset at 5,985 feet and packer set at 5,974 feet, with 2 1/16-inch Otis side-wall choke. After washing the well back in, it flowed 73 bbls. of oil in 12 hours with an estimated 250,000 feet of gas, casing pressure 2,450 pounds. The packer connection broke, and the well went into gas production. Operators are now resetting packer.

Rodessa Completions

United Gas No. 27 Rodessa Oil & Land Co., NE NW section 15-23-16, flowed 26 bbls. in eight hours, after reacidizing, total depth 5,993 feet.

In Cass County, Texas, R. W. Norton No. 1 Davis, H. Holbert Survey, flowed 314 bbls. in 24 hours, tubing pressure 500 pounds, casing pressure 650 pounds, total depth 6,022 feet.

United Production Co. No. 6 G. W. Bibby Unit, Alex Archer Survey, flowed 11 bbls. hourly through one-fourth inch tubing choke, total depth 6,050 feet.

United Production Co. No. 1 J. Q. Clements, William B. Hughes Survey, flowed 8 bbls. hourly through one-fourth inch tubing choke, total depth 6,080 feet.

Bienville Parish

Five miles south of Arcadia, Bienville Parish, Louisiana, Marr, Lide & Greer No. 1 Smelley, SE SW NE section 13-16-5, was completed as a 20,000,000-foot wet gasser in one of the upper Travis Peak sands, 2,900 pounds closed in pressure, total depth 7,200 feet.

The same operators are now spudding No. 1 W. J. Smelley, SE NW SW section 18-16-4w, about three-quarters mile to the west, which is a proposed 8,000-foot test in search of oil saturation.

Bossier Parish

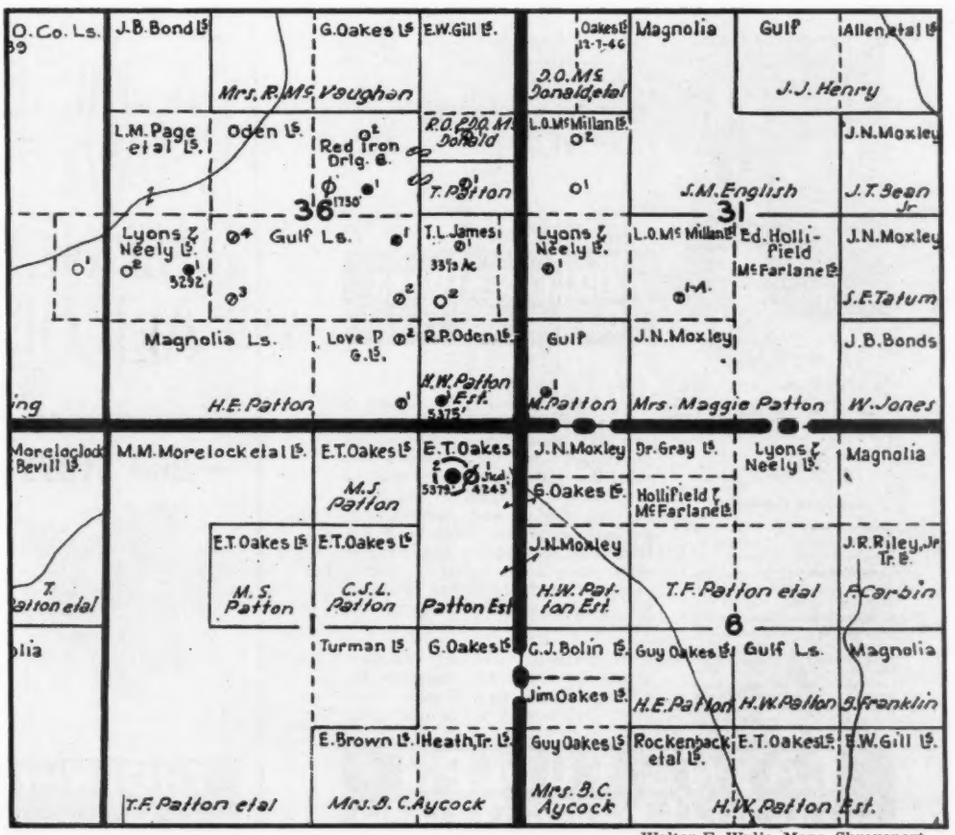
United Gas No. 1-H A. C. Skannal, NE SE section 26-17-12, was completed as a 210-bbl. flowing well in the Sligo field, southwestern flank of the Sligo gas field, tubing pressure 175 pounds, casing pressure 500 pounds, total depth 5,144 feet in the Pettit sand.

The recently enacted order from the minerals division of the Louisiana Department of Conservation governing drilling and allocation at Sligo was placed in effect April 1. Allowable oil production is on a 75 per cent acreage and 25 per cent bottom-hole pressure basis, with a gas limit factor of 2,000 to 1 imposed. The order further provides that no more than 40 acres may be nominated for the acreage factor in any one well. Five oil producers have been completed in the field to date.

Lisbon Field—Claiborne Parish

With four producing wells in the Lisbon field, discovered December 25, 1936, and 15 wells either rigging up or drilling, this area is now North Louisiana's center of activity.

Ray P. Oden and others made the second completion in the field in No. 1 W. H. Patton, SW SE SE section 36-21-5w, which flowed 487 bbls. in 24 hours on initial test through seven-sixteenths and three-fourths inch tubing choke, tubing pressure 75 pounds,



—Walter E. Wylie, Maps, Shreveport.

New Lisbon field, Claiborne Parish, Louisiana, where four wells have been completed with an aggregate production of about 2,000 bbls. daily. Fifteen additional wells are either rigging up or drilling

casing pressure 400 pounds, gravity 34.1, total depth 5,373 feet.

Lyons & Neely No. 1 H. E. Patton, NE NW SW section 36-21-5w, was completed soon thereafter flowing 450 bbls. per day through 1-inch tubing choke, saturation 5,274-84 feet, tubing pressure 50 pounds, casing pressure 325 pounds, total depth 5,292 feet.

As the week closed, P. W. Woodruff and Red Iron Drilling Co. were completing No. 1 H. E. Patton, S half SW NE section 36-21-5w, which was flowing at the rate of 30 to 40 bbls. hourly and indicating itself as the best completion to date.

The Gulf Refining Co. is now either rigging up or drilling at five locations in this field. T. L. Jones and others are rigging up at two locations; Love Petroleum Co. have two active locations; and Lyons-Neely, McMillen and others and P. W. Woodruff each have an active operation at Lisbon.

Gulf—Pipe Line Co. has begun construction work on a 6-inch 12-mile line into Lisbon, which is to connect with their El Dorado, Ark.-Port Arthur line, at a point near Spring Lake, about 4 miles south of Homer. This will be Lisbon's first pipe line outlet, as production is now being trucked out.

Sugar Creek Prospect

The Sugar Creek Syndicate No. 1 W. Brown, W half NE quarter section 1-19-6, strongly indicated itself as a probable oil field opener on the northern flank of the Sugar Creek gas field last week. Formerly this well was a gas producer from the Oolitic lime section between the massive and anhydrite stringer, the prevailing deep gas producing zone at Sugar Creek. Drilling deeper operations carried the hole to 5,984 feet in the Travis Peak, when it was plugged back to 5,743 feet, 5¾-inch casing set at 5,597 feet, and the previously logged porous and saturated zone tested. First swabbing operations yielded only about 5 bbls. hourly, and the well was first acidized with 2,000 gallons and reacidized with 5,000 gallons. A high fluid level resulted, and swabbing operations did not noticeably lower the fluid. Tubing was run and after some testing, well began flowing naturally through the annular space, and filled all available tankage. Additional tanks are now being constructed, preparatory to initial testing.

Estimated Daily Production

Estimated daily gross production all companies week ending April 3:

NORTH LOUISIANA

Bellevue	800
Caddo light	4,025
Caddo heavy	2,405
Converse	915
Cotton Valley heavy	325
Cotton Valley light	520
DeSoto and Red River	1,390
Elm Grove	360
Haynesville	3,290
Holly	150
Homer	2,660
Lisbon	825
Pleasant Hill	130
Rodessa	49,500
Sarepta-Carterville	400
Sligo	400
Urania	2,850
Zwolle	700
Total	71,645

SOUTH ARKANSAS

Champagnolle	1,605
El Dorado	2,000
Lisbon	285
Miller County	550
Nevada	760
Smackover light	2,100
Smackover heavy	16,800
Stephens	540
Troy	1,425
Urbana	1,375
Total	27,440

Texas side of Rodessa field, 46,375 bbls. daily.

Caddo Parish

Stanolind Oil & Gas Co. completed its No. 119 Dillon, SE NE section 14-21-15, Caddo Parish, pumping 65 bbls. daily, total depth 1,675 feet.

DeSoto Parish

Grogan Oil Co. and others abandoned No. 1 Ramsey, section 36-11-11, DeSoto Parish, recently as a dry hole at 3,027 feet. Soon thereafter oil began to leak and flow around the casing, and as flow seemed to increase considerable excitement was created in the nearby vicinity. The Grogan company is now moving rig back on location, and they plan to recondition the hole and thoroughly test all possible producing levels.

Gulf Refining Co. No. 36-A Jenkins, SE section 2-12-12, was completed at total depth of 2,453 feet, pumping 7 bbls. oil and 30 bbls. salt water daily.

Perla Oil Corp. No. 1 Joyner, SE NW SW section 28-11-12, has been temporarily abandoned at 3,300 feet, following unsuccessful fishing job. The showing of oil and gas reported in sand 2,893-2,897 feet was not tested.

Grant Parish

Preparations are being made to begin drilling of the 7,500-foot test on geophysical high near Colfax, to be known as McConnell Oil Co. No. 1 Ivy McNeely, SW section 16-6n-3w. The test is upon a 10,000-acre block.

Grantland Production Co. completed No. 1 Swope-Labrat, NE SW section 8-9-1e, pumping 30 bbls. per day, total depth 1,609 feet.

Lincoln Parish

After being geologized by H. D. Easton of Shreveport, E. T. Oakes, E. B. (Cowboy) Evans, and H. D. Easton are jointly preparing to drill No. 1 R. L. Sanderson, near center of NW of section 30-18n-1w, about 8 miles east of Ruston on the Choudrant structure, where these operators hold about 10,000 acres acquired from E. T. Shaw. Heavy rig is now being moved to location, and operations will begin immediately. Regionally, this wildcat is about 20 miles southeast of the Lisbon oil field, recently discovered by Oakes and Easton.

Webster Parish

After drilling to 7,202 feet in No. 1 Fudicker, NW corner section 2-17-9, about 1 mile southwest of prolific gas-distillate production in the Sibley pool, Standard Oil of Louisiana plugged the wildcat extension well back to the Sibley level, perforated 7-inch from 5,560-5,600 feet, and on initial test the well flowed 52 bbls. of distillate, 29 bbls. of slightly brackish water, and 6,300,000 feet of gas. The Sibley discovery well, J. P. Evans No. 1 Crichton, section 35-18-9, had initial gas volume of about 80,000,000 feet, heavily saturated.

In the Cotton Valley field, United Gas completed its No. 2 J. M. Mixon, SW corner section 22-21-10, flowing 297 bbls. of distillate in 24 hours through

(Continued on Page 95)

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By
GEORGE WEBER

DISCOVER DEEPER SANDS IN WIDELY SCATTERED SECTORS

CORPUS CHRISTI, Tex., April 5.—Prospects for new production are seen in the Lower Gulf Coast according to indications in wildcats and field tests of that area. Deeper sands were brought into production and extended in Nueces County fields, and a new deeper sand was cored in the McCampbell field of San Patricio and Aransas counties. Starr County in the Lower Rio Grande Valley figured in the week's news with one new field and a high pressure gas well in Barbacoas.

The McCampbell field, producing from a 6,550-foot sand had indications of deeper production, according to results reported on the Buckingham Oil Co. No. 2-B McCampbell. The test found the 6,550-foot sand of the field unproductive, and was carried deeper to 7,440 feet. Sand with a show of distillate and gas was reported cored from 7,320 feet to 7,335 feet underlain by the thick body showing good oil saturation. This sand was cored in the discovery well of the field, Buckingham Oil Co. No. 1 McCampbell, but a blowout prevented a test of the horizon. Casing has been set on the No. 2-B at 7,440 feet, and completion attempts will be made shortly.

Buckingham Oil Co. and Atlantic Refining Co. share the greater part of the acreage in the field. Those two companies together with three other operators have eight active rigs in the field. The expected extension of the field which was indicated last week did not materialize. Collins & Broughton cored the field sand in their No. 1 at 6,546-58 feet and set casing at 6,560 feet. The well swabbed salt water, however, and no further reports have been made. The outpost test was located about one-half mile northeast of production.

A new deep horizon was opened to production during the week, as Wellington Oil Co. No. 14 Sevier was brought in. The test, as yet ungauged, was making wash water and high gravity crude on a one-eighth inch choke from sand at 5,425½-33 feet. Pressures were 1,600 pounds on the tubing and 1,800 pounds on the casing. The new 5,425½-foot horizon is the third to show production in the field.

Sullivan Field's Wild Gasser

Agua Dulce's new indicated sand has not yet been tested, as the United Production Co. No. 1 Harvey drills below 7,530 feet. The test cored oil sand at 7,382-95 feet. To the south in the Sullivan field, the Texon Drilling Co. is pumping mud into No. 2-B Sevier, directional test to No. 2 Sevier, which blew out several months ago, cratered and caught fire. The wild well, which has defied efforts to kill it for several weeks, is expected to be controlled shortly. It has become one of the most serious blowouts in the history of the county, breaking out into numerous craters, and covering a large area with mud. The Texon No. 2-B Sevier is bottomed at 6,465 feet the level at which the No. 2 is believed to have blown out. In the Sullivan field, the Invincible No. 1-B Elliff is drilling below 3,000 feet, and Lockhart has staked location for another test, No. 1 Purl.

Saxet Field

The 2-mile northeastward extension well in the 6,300-foot sand in Saxet was gauged during the week, making an initial production of 92 bbls. per day. That important test, Phillips Petroleum Co. No. 5 Hutchins is located in Block 29, of the Sheppard farms, and opens the sand over a considerable area, presaging increased deep drilling in the field.

A number of deep tests are active in the Saxet field. Three are on the 6,300-foot sand, in various stages of possible completion. Two are being completed in the deepest 6,900-foot horizon. Five other tests are drilling below 6,000 feet. Some tests in the deeper sands have been failures, with operators plugging back and perforating in the shallower sands in completion attempts. The activity in the lower sands is increasing, taking place of drilling in the older horizons which are fast being drilled up.

New London Field

Two new producers were nearing completion in the new London field of central Nueces County late in the week. Cosner & Cosner No. 1 Stockton is completing after perforating at 4,703-19 feet. The test, previously perforated at 4,699-4,702 feet made salt water, due, it is believed, to a poor cement job. The Cosner test is a diagonal southwest offset to discovery. In a direct south offset, the Gem Oil Co. No. 1 Stockton recovered 250 feet of pipe line oil in 10 minutes at 4,716-23 feet and had set casing. The Gem test previously tested salt water in an upper sand at 4,563 feet. These two tests are in advance of production in the field.

The Chapman Ranch field, located a short distance south of London, will shortly receive a test, as the Seaboard and Allen No. 3 Chapman approaches the field sand. The No. 3 Chapman is located 1,320 feet east of the discovery well.

Failure in London Area

In the London area, E. M. Jones abandoned the No. 1 Lucy Cook at total depth of 7,020 feet. The test, located northwest of the newly discovered London field, encountered no commercial oil shows.

Starr County led the Lower Rio Grande Valley in development during the past week, as one new field was opened, and a high pressure gasser threatened to blow out in another field. The L. E. Dodd, Trustee, No. 1 Wood Estate, in the center of Porcion 84, and 1¼ miles southeast of production in the new Ricaby field, was brought in during the week, making 45 bbls. per hour on a five-sixteenths inch choke. The test is completed in sand at 1,735-49 feet. The crude shows a gravity of 24.3. In the Barbacoas field, the Merren & Jefferies No. 1 Starr County Cattle Co. was in Cockfield sand at 5,377-80½ feet. The gas was showing considerable pressure, and operators are killing the well.

Lower Gulf Coast

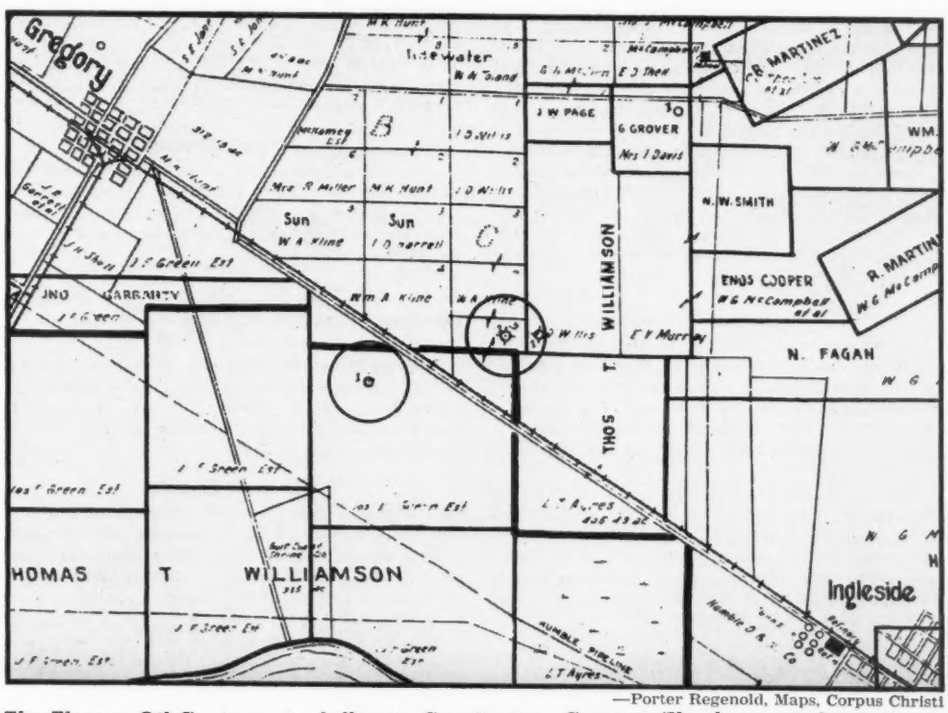
The Lower Gulf Coast is the focus of interest in Southwest Texas, as several interesting wildcats progress. In San Patricio County, two are showing promise. The Phillips Petroleum Co. No. 1 Schmidt, located between Gregory and Taft is shut down at 6,340 feet for repairs, at latest reports. The wildcat is reported to have had several good showings, including one at 5,330-53 feet. That sand showed 100 feet of mud with an oil odor on an attempted drill stem test before the tool slipped. The information on No. 1 Schmidt is being withheld by operators, but importance is lent to the test by the presence of casing and tubing on the lease.

To the southeast, the Eleanor Oil Co. is coring below 7,100 feet in No. 1 Green Estate. The wildcat, located about 2 miles southeast of Gregory, and 4,000 feet southwest of the same operator's No. 1 Kline, has reported shows of oil at 6,575-83 feet and 6,788-6,809 feet. Drill stem tests have failed in both sands.

Adding to the interest in San Patricio County, Wheelock & Collins are rigging up on another wildcat in the vicinity of the two above tests. The No. 1 Willis is located 3 miles north of Gregory in Block "E" of the Gregory Farm Lands Subdivision.

To the northeast in Aransas County, further in-

(Continued on Page 98)



—Porter Regenold, Maps, Corpus Christi

The Eleanor Oil Co. is again drilling in San Patricio County. The large circles indicate locations of the No. 1 Green Estate, drilling below 7,100 feet with reported showings between 6,500 and 6,800 feet, and No. 1 Kline, abandoned several months ago after unsuccessful attempts at completion in sand reported cored at 6,485-6,521 feet. An east offset of the No. 1 Kline was abandoned without showings

Michigan Field Report

By
PAUL A. ELLIOTT

EXTEND BUCKEYE TOWNSHIP FIELD QUARTER MILE NORTH

MUSKEGON, Mich., April 5.—With the potential production of the new Buckeye Township, Gladwin County field in Central Michigan, increasing almost daily, officials of several of the major producers represented in this area last week took first steps toward possible proration of larger wells.

At a meeting in Saginaw, Mich., it was agreed proration would not be considered for any well making less than 500 bbls. daily, thereby restricting the output only of some of the larger producers.

Daily potential and average daily production already is very nearly equal to the present pipe line capacity from the field, or 18,000 bbls., it was reported.

O. H. White, former proration umpire for the Oil and Gas Association of Michigan in the Porter and Crystal fields, has been asked to act as proration umpire in Buckeye, his expenses to be paid by the producers as a deduction from oil runs.

By taking voluntary action, Buckeye producers are jumping ahead of the state legislature at Lansing which is now considering "a bill to prohibit waste in the development, production or handling of crude petroleum and casinghead gas, or the products thereof."

The bill provides for the employment of a proration umpire, or other employes, by an advisory board, also set up in the measure, to be under the jurisdiction of the supervisor of wells, and for the supervisor, the advisory board and the proration employes to be charged with the responsibility of enforcing oil and gas conservation rules and regulations already adopted by the state.

Buckeye—Gladwin

For the fourth successive week, the Buckeye Township, Gladwin County, field not only led the state but added more than 8,000 bbls. of initial, or daily potential, to its output.

Largest of six new Dundee oil producers in the field was the Hyatt & Norton No. 1 Campbell, SW NE NW section 12-18n-1w, which made 98 bbls. an hour initially as a north and west outpost and was rated good for about 2,300 bbls. daily, topping the Dundee limestone at 3,584 feet and drilling about 67 feet in. It extends that part of the field a quarter mile north.

Another large well was brought in by the Double-K Trust when the No. 2-A State, SW NE NW, section 14, made 1,670 bbls. a day topping the Dundee at 3,546 feet and drilling to 3,638 feet, while the same operator's No. 3-A State, SE NW NE, same section, was completed for about 1,000 bbls. a day at 3,608 feet.

Southeast Buckeye

In the southeastern section of Buckeye Township, one of the two extremities which operators hope will be directly connected, a comparatively large well was brought in by Petroleum Investors, Inc., the No. 2 Upton, SW NE NW section 36, making 800 bbls. daily from the Dundee topped at 3,486 feet and drilled 65 feet into the lime.

Marshall H. Baumann had oil in the hole in two tests, the No. 1 Thompson, NE NW SW section 14-18-1w, and the No. 1 State, SW NE SE section 2-18-1w, each located in the northwest area of the field. Half a dozen other tests were drilling in or nearing Dundee completion as a host of more rigs than in any other field was at work in Buckeye.

Extension Tests

Two tests which the week before indicated possible extensions, one southeast of production into Billings Township and the other between the two major areas in Buckeye as a possible connection, had not yet been completed when the week closed, though both were being tested.

The McClanahan Oil Co. No. 1 Avery Estate, SW NW NW section 10-17n-1e, Billings Township, Gladwin County, extension test, made 30 bbls. on the swab assuring production over a stretch of about 2½ miles southeast of previous production in Buckeye Township. Dundee was topped at 3,490 feet, pay about 80 feet in, and drilling completed at 3,615 feet. Operators were treating with acid expected to considerably increase the output.

Muskegon Development Co. No. 1 McMahan, SW SW NW section 25, Buckeye Township, located about 2 miles northwest of the Oard-Buckeye section, settled down to making 20 bbls. daily on the pump after an initial of 40 bbls. a day indicating the connection between the Oard and Wicklund pools in Buckeye. It was treated and still testing for possible increase from the Dundee.

Clark & Johnson No. 1 McMahan, NE NW SW section 36-18-1w, in the Oard-Buckeye region, brought in flowing 60 bbls. an hour and estimated good for at least 1,200 bbls. initially.

Franklin Petroleum Development Co. recorded natural initial of 1,008 bbls. in 24 hours from the No. 1-A State, SW NW NE section 11, in the Wicklund-Buckeye area in the northwest section of the busy township.

Sherman—Isabella

In the Sherman Township, Isabella County, area, Pure Oil Co. finished No. 2 Leiter, SW NW NW section 34-15n-6w, for 120 bbls. a day after acid treatment at a total depth of 3,621 feet.

Same company boosted the daily potential of No. 1 Leiter, in section 33, previously drilled into the Dundee for a natural production of 497 bbls. daily, to 720 bbls. by acid treatment.

Pure No. 1 Dell, SE SE SE section 28, Sherman Township, made 32 bbls. a day after treatment.

The Rowmor Corp. No. 1 Bishop, SE SW NW section 28, was abandoned and the rig moved off location after drilling to 1,072 feet and being shut down for the past three months. Failure of the Turner Petroleum Corp.'s Merrihew, two locations east of the Bishop, was credited with the abandonment.

Midland County

The only completion for oil in Midland County during the past week was Schelling and Schrot No. 1 Holmes, NE SW NW section 8-14n-3w, Greendale Township, previously drilled into the Dundee but later completed after acid treatment for an initial output of about 300 bbls. daily.

Dundee was topped at 3,506 feet, pay encountered from 3,546 to 3,551 feet and drilling suspended at 3,585 feet.

Rex Oil & Gas Co., subsidiary of the Naph-Sol Refining Co., Muskegon, reported No. 1 Huntoon, NW NW SE section 23-13n-1w, Porter Township, an edge test in the state's biggest oil producing pool, was dry in Dundee last week.

Ogemaw County

The Ross & Bernier, Inc. No. 1 Izworski test, NW NE NE section 23-22n-1e, in Ogemaw Township and county, made 500 bbls. in 14 hours after acid treatment in the Dundee last week, then settled down to 200 bbls. a day as one of the largest recent completions in the Ogemaw County field.

Dundee was topped at 2,727 feet, the major pay at 2,819 feet, and the hole was finished at 2,838 feet, somewhat deeper than many wells in Ogemaw.

Frank Balcer completed No. 1 Morris, NE SW section 25-22n-2e, West Branch Township, as a "duster" in the Ogemaw area.

Crystal—Montcalm

In the Crystal-Montcalm area, Daily Crude Oil Co. No. 1 Hollabaugh, SW SE SE section 26-11n-5w, was dry and abandoned, marking the west edge.

The Bushnell Oil & Gas Co. No. 1 Lott, NE NW NW section 13-10n-5w, Crystal Township, a semiwildcat test drilling about half a mile east of the southern tip of the Two-townships field, had a hole full of oil and was expected to make commercial production after an acid treatment.

One other test in Ferris Township was scheduled to test the Dundee oil pay this week.

Gratiot County

The W. E. Ross No. 2 William Akin test, C NW NE section 9-10n-4w, New Haven Township, Gratiot County, was expected to drill into the Michigan Stray gas sands this week in the Gratiot County gas field east of the Crystal oil field.

Muskegon County

More than 2,000,000 feet of Berea gas production was added last week in the Ravenna field, Muskegon County, when two new wells were completed and a third increased with a shot, all for the West Michigan Consumers Co., Muskegon industrial gas line operators who control the field with a block of nearly 20,000 acres under lease.

The No. 1 Cyderman and others, C SE section 6-9n-14w, Ravenna Township, was rated good for 1,000,000 feet a day, topping the Berea at 1,117 feet, logging gas to 1,186 feet and completing at 1,196 feet.

The No. 1 Knapp and others, C SW section 9, same township, made 338,000 feet naturally and was boosted to 800,000 feet a day with a time-bomb, tamper shot. Berea was first encountered at 1,230 feet, gas from 1,235 to 1,241 feet and the hole bottomed at 1,252 feet.

The No. 1 Hoyle and others, previously reported good for 250,000 feet daily, was increased to 800,000 feet after shot. One new test had been started and three locations were to be made this week.

The field now boasts a combined daily potential of about 16,000,000 feet from 18 producing gassers.

Clayton—Arenac

In the Clayton Township, Arenac County field, a 3,500,000-foot gasser was completed in the Berea by Charles H. Bell in No. 1 Dobler, NE NE SW section 9-20n-4e, total depth 1,168 feet.

McClanahan Oil Co. was nearing Dundee oil completion of two tests on the discovery Seignious lease in section 3, same township.

Devonian Oil Co. increased the daily Dundee crude output of No. 1 Peavy, partly owned by the Red-Man Oil Co., from 425 bbls. to about 700 bbls. daily by acid treatment.

Ponchartrain Petroleum Corp. reported a good show of oil in a test on the southeastern tip of the Howell structure, No. 1 Boynton, NE SE NE section 27-4s-8e, in Sumpter Township, Wayne County. About 110 feet of saturated lime was logged in the Trenton formation topped at 2,440 feet. Several hundred feet of light gravity oil rose in the hole, it was said, with the operators planning to shoot with nitro.

The only active test in Clare County, the Wittmer Co., Inc., No. 1 Musgrave Sales Co., C SW SW section 3-18n-5w, Lincoln Township, started in search of Michigan Stray gas sands but continued into the Dundee limestone, was being abandoned at 4,167 feet after encountering bottom water.

Eight counties were listed among 16 permits in the last issue by the state conservation for new activity in Michigan.

Wildcats included a new test already started by the Muskegon Development Co. on the Holthof and Sawyer lease, NE SW SE section 17-4n-13w, Salem Township, Allegan County, about 50 miles south of Muskegon.

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Among Gulf Coast Drilling Contractors

George Echols who has drilled numerous discovery wells and opened several extensions for various companies and independents is making preparations to test his No. 3 Bennett, which has the appearance of opening a mile north extension to the Heyser field in northwestern Calhoun County. The well is reported to have cored three sands above 5,476 feet, the total depth and a string of 7-inch casing has been cemented on bottom. The well is located on a 75-acre lease and if productive will open considerable acreage for development, which up to the present time has been drilled jointly by Humble Oil & Refining Co., Plymouth Oil Co. and the Portilla Drilling Co. Contract was received from the Gem Oil Co. for a test in the Flour Bluff field. Other activity is being shown at the Gillis and Greta fields for Fohs Oil Co. and Josey & Bruton.

Cron & Gracey have eight strings of tools running. One is near Houma in Terrebonne Parish for the Fohs Oil Co., one in Evangeline Parish for the Continental Oil Co., one at West Columbia for the Texas Co., one at Dickinson for Stanolind Oil & Gas Co., one at Hitchcock for Shell Petroleum Corp., one at South Houston for Stanolind Oil & Gas Co., one at Rockport in Aransas County for the Barnsdall Oil Co., and one at Flour Bluff for the Humble Oil & Refining Co.

Nicklos Drilling Co. has apparently opened two new producing sands in the Valentine field for the Pan American Production Co. Seven-inch casing has been cemented on a sand at 5,390 feet, while on another test oil sand has been cored to 7,521 feet, and a production test will probably be made. In the same field, contract was received for No. 5 Harang and a rig will be moved in as soon as one well is completed. In the meantime in the Tepetate field, No. 7 Welch at Tepetate is drilling below 7,163 feet, while No. 9-A Homeseekers Development Co. is being completed for the Continental Oil Co.

Smith & McDannald have received contract from the Pan American Production Co. for a well in the Port Barre field, while in the Mauritz field in Jackson County a nice extension is expected to be made for the Shell Petroleum Corp. by the completion of No. 1-B Mauritz, which showed pipe line oil on a drill stem test through perforations at 5,645-47 feet. One well is being completed in the South Houston field for Stanolind Oil & Gas Co. and the rig will be moved to another location. Texas Co. test at Long Lake has been completed and the rig is being moved over for the Tide Water Oil Co., which makes a total of three rigs running in this field for that company. In the Old Jennings field, Shell Petroleum Corp. No. 2 Community is being tested through perforations while at St. Martinsville one rig is being moved in for Tide Water Oil Co. No. 3 Smedes. Two wells were completed in the Dickinson field for the Pure Oil Co. and the rotaries are expected to be moved to new locations which will be announced next week.

A recent survey made of the rigs operating in Amelia and Hastings, the Gulf Coast's most active fields, shows a total of 25 strings of tools being operated by Gulf Coast contractors. At Amelia in Jefferson County, Loffland Brothers have moved in two rigs to the West Beaumont area, adjoining the field to the north, for Stanolind Oil & Gas Co. No. 1 J. W. Hall and No. 2 Sargl. Locations for four additional tests were made by Stanolind the past week, all of which are expected to be drilled by Loffland. Glenn H. McCarthy is operating two rigs for the Humble Oil & Refining Co. and has one rig running for himself. The balance are operated by Heyser & Heard, Rowan Drilling Co., Jim Rush and Edwards Drilling Co.

In the Hastings field, T. A. Carlton is operating one rotary rig for the Coastwide Oil Co., Noble Drilling Co. has three for the Stanolind Oil & Gas Co., Loffland Brothers have three running for the same company, and Harrison & Dillard have three for the same company. Wynne Crosby has one running for the Navarro Oil Co., Albert Plummer is operating for himself, while Humble Oil & Refining Co. is operating three of its own rigs.

Golden & Farris, who have been operating in the Lower Gulf Coast district, have moved in one rig to the South Houston field for Stanolind Oil & Gas Co. Other activity in this field is being done by Cron & Gracey, Smith & McDannald and Adrian Moore.

H. B. Jordon is scheduled to make a production test of Humble Oil & Refining Co. No. 1 Kirby Lumber Co. in the Segno field in Polk County which practically assures this field of a 1,600-foot east extension. The hole is bottomed in the Cockfield sand at 5,202 feet and casing has been cemented at 5,187 feet. Thompson Brothers have spudded J. K. Dorrance No. 3 Wing, while Gulf Production is nearing the pay on its No. 1 Wing.

O. W. Dyer is preparing to make a production test of Atlantic Refining Co. No. 1 Anderson in the Dickinson field. The hole is bottomed at 8,098 feet and 7-inch casing has been cemented on bottom, and a test will be made through perforations in oil sand cored at 8,066-92 feet. He is also operating two rigs in the McCampbell field in Aransas County for the same company.

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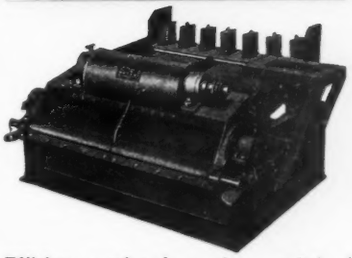

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BAMMEL PROSPECT, HOUSTON AREA, PRODUCES DISTILLATE

By
F. L. SINGLETON

HOUSTON, Tex., April 5.—The Bammel Prospect, north of Houston in Harris County, was proven for distillate production by the completion of Hamill, Smith and others (George Lawrence) No. 1 Zapp which is flowing an estimated 20 bbls. of water-white distillate and 250,000 feet of gas daily through 9/64-inch bottom-hole choke with working pressure on the tubing 300 pounds and shut-in casing pressure 2,300 pounds. There is no showing of salt water. Production was obtained by perforating the casing with 36 holes at 6,412-28 feet, believed to be the Cockfield section. The well is in the J. Farwell Survey.

To the southeast on the Aldine Prospect, Texas Gulf Producing Co. No. 1 Gillespie and Garnsey indicated production possibilities as it began to show considerable crude oil after several hours of washing. The hole was originally drilled to 8,084 feet, and after cementing 7-inch casing at 7,180 feet, perforations were made at 7,097-7,100 feet. The hole was washed with clear water for 12 hours, and as the operators were preparing to reperforate, the well began to show signs of production. Aldine is another prospect in which numerous wells have been drilled during the past year, and practically all of them have had encouraging showings of oil and gas. The test is southeast of these dry holes in the Simon Contreras Survey.

Texas Co. No. 1 T. N. Mauritz located on the Ganado Structure southeastern Jackson County, mentioned last week as a possible pool opener was cored to a depth of 5,111 feet and is standing with 7-inch casing cemented at 5,080 feet, after an 8-minute drill stem test at 5,089-5,111 feet showed 350 pounds of pressure and 130 feet of oily mud of which 50 per cent was oil. A previous test at 5,081-94 feet showed 250 pounds of pressure and 30 feet of oily mud. It is located in the Morris and Cummings Survey and is the first test drilled on a solid block of 4,200 acres.

A Disappointment

Glenn H. McCarthy No. 1 Foley, the discovery well of the Palacios area, Matagorda County has proved to be quite a disappointment and the prospects of an active development program taking place has been temporarily halted. As the well cleaned itself of wash water last week from perforation made in the 7-inch casing at 8,573-83 feet, it flowed an estimated 2 to 3 bbls. of fluid per hour through an eighth-inch choke with tubing pressure 2,500 pounds and casing pressure 2,000 pounds, and then started to show salt water. The pressure dropped from 2,800 pounds to 2,200 pounds and at the time it was killed it was making an estimated 3,000,000 feet of gas, showing 90 per cent salt water and 10 per cent oil. As several sands were encountered, the operators set a cement retainer at 7,906 feet and perforated at 7,830-42 feet and at 7,873-85 feet. It was then swabbed in and is flowing wet gas through a quarter-inch choke with the tubing pressure 2,500 pounds and casing pressure 1,000 pounds.

The second producer for the Mauritz field, Jackson County, looms by the showing of Shell Petroleum Corp. No. 1-B Mauritz which is running screen and liner after a drill stem test through perforated casing at 5,645-47 feet, blew oil and gas for 30 minutes and after the testing tool was closed showed 900 feet of pipe line oil with no salt water. It is southeast of the discovery well, being the only direction in which production has not been defined.

Following the completion of its No. 1-C Lawrence which opened the first oil production for the South Cotton Lake area, Chambers County, Salt Dome Oil Corp. made location for five tests. No. 2-A is 1,175 feet due west of No. 1-A Lawrence, No. 3-A Lawrence is 1,175 feet due east of No. 1-A; No. 2-C is 710 feet due north of No. 1-C; No. 1-D is 932 feet west of No. 1-C and No. 2-D is 575 feet west of No. 1-D, all being located in the Solomon Barrow Survey. On a potential test, No. 1-C Lawrence flowed 636 bbls. of 32 gravity oil per day through a quarter-inch choke with tubing pressure 1,500 pounds and casing pressure 750 pounds.

Lockridge Extended

The Lockridge field, Brazoria County, was extended about 1,750 feet due east by the completion of Shell Petroleum Corp. No. 2 Ramsey Prison Farm. On a 24-hour gauge it flowed 577 bbls. per day through a quarter-inch choke with tubing pressure 1,725 pounds and casing pressure 2,000 pounds. Gravity tested 27 degrees. This is the second completion to be made on the Prison Farm that was leased from the state after the field was discovered. Gulf Oil Corp. No. 1 Carrie Baker was deepened to a total depth of 6,368 feet and is being tested through perforated 5-inch liner set on bottom.

Commonwealth Oil Co. No. 1 Bennett, about a mile north of the Heyser field made a four-minute drill stem test at 5,465-76 feet and showed no pressure and 400 feet of drilling mud cut with oil. This is disappointing in face of three showings of oil and gas encountered at 5,413-14 feet; 5,465-67 feet and at 5,467-71 feet. However, 7-inch casing has been cemented on bottom, and a test will be made through perforations.

Humble Oil & Refining Co. No. 1 Jefferson Land, located on the Cheek Prospect, Jefferson County, set a cement retainer at 7,756 feet after showing salt water last week. Casing was perforated at 7,830-45 feet and it flowed dry gas, with tubing pressure 2,700 pounds and casing pressure 1,000 pounds, and then started making salt water. The screen and liner is being pulled and a test will be made in the top sand section at 7,830 feet.

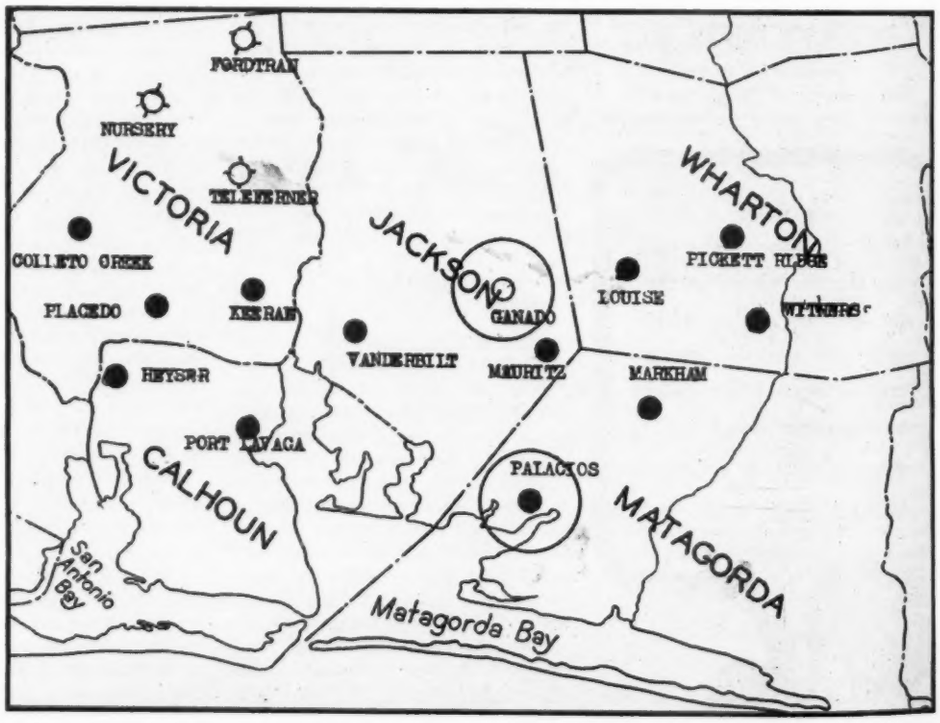
Three completions were recorded for the Amelia field in Jefferson County which has become one of the most active fields on the Gulf Coast. All completions were made by Humble Oil & Refining Co. No. 1 LeGrange in Block E, Lot 33, flowed 105 bbls. per day through a quarter-inch choke through perforated casing at 6,774-78 feet and is being killed to recomplete due to the high gas-oil ratio. No. 1 Industrial Investment Co. flowed 139 bbls. per day through a quarter-inch choke through perforations at 6,775-78 feet, while No. 4 Tyrell-Combest in Block 13, A. Savery Survey, flowed 10 bbls. per hour through perforation at 6,774-78 feet and is being killed to work over. In the West Beaumont field, located to the north in the H. Williams Survey, Stanolind Oil & Gas Co. has begun operation on No. 1 John W. Hall and No. 2 Sargl, and locations have been made by the company for additional wells, No. 1 W. P. McCormick, and No. 3, 4 and 5 Sargl, all in the H. Williams Survey.

Hockley Dome

On the old Hockley dome, Harris County, Stanolind Oil & Gas Co. No. 1 Warren Minerals cored sandy lime with a good oil odor at 6,549-87 feet, and after cementing 5-inch liner at 6,432 feet it flowed salt water with no show of oil or gas. A cement retainer was set at 3,800 feet and the casing was perforated with 10 shots at 3,774-88 feet and it showed 1,000 feet of sulfur water. A cement retainer has been cemented at 3,700 feet and perforations have been made at 3,665-95 feet. Unless the well shows something of importance it will no doubt be abandoned. At the Clinton field, and 4,150 feet south of the discovery well, Stanolind Oil & Gas Co. No. 1 Oates attempted to blowout while coring at 8,501 feet, but was brought under control and is coring ahead below 8,537 feet.

In the northwest extension area (Diadem area), of the Dickinson field, Galveston County, Atlantic Oil & Refining Co. No. 1 G. O. Anderson cored oil sand

(Continued on Page 95)



Large circle indicates new discoveries in Matagorda and Jackson counties, Texas, by Glenn H. McCarthy and Texas Co. The latter well is to be given a production test during the week

Oklahoma Operations

By DAL DALRYMPLE

WILDCAT, GIVEN UP AS DRY, BLOWS IN AS BIG GAS WELL

Two wild gassers added a spectacular tinge to the Oklahoma oil picture the past week, without lessening interest in recent strikes at Langston in Logan County and south of the Fitts field in Pontotoc County.

One of the wild gassers, Helmerich & Payne and others No. 1 Graham, SW SW NE section 12-1n-5w, Stephens County, had been abandoned as a dry hole at 5,014 feet, contract depth. The derrick still was standing but the tools had been removed, when the well blew in. No gauge of production had been made, estimates ranging from 8,000,000 feet to 25,000,000 feet. Source of the gas had not been determined, but geologists correlating the well log with wells in the shallow Doyle field nearby believe the gas was coming from between 3,900 to 4,300 feet, where there was some saturation in cuttings. Danger of loss of the hole through cratering was reported the first of this week.

The other unruly gas well was in the Garvin County sector of the Tussy pool. It was the Wrightsmith Oil Co. No. 3 Yates, SE NW SW section 33-1n-3w. The well blew in more than a week ago, caught fire and burned for nearly three days before flames were extinguished. The original derrick was destroyed, but a new one was skidded over the hole, control equipment was being installed and operators prepared to kill the well. Gas volume was estimated as high as 25,000,000 feet.

The gusher that recently revived interest in the old Langston area, Logan County, was completed with a potential of 10,165 bbls. Several new tests were started or proposed and there was much lease and trading activity in the area as a result of the strike.

Work was started at two new tests south of the Fitts field, where E. H. Moore and others No. 1 Muse, SW NE SE section 33-2n-7, opened a new area or extended the Jesse trend to the northwest. One of the new tests was E. H. Moore and others No. 1 Thompson, NW SE SE section 33-2n-7, and the other was Blackstock Oil Co. No. 1 Thompson, NE cor. section 4-1n-7. The No. 1 Muse, in its best production test, flowed 581 bbls. of oil through tubing in 24 hours from plugged back depth of 4,570 feet.

Pontotoc County

Ten new oil wells were completed in the Fitts field, Pontotoc County, and one failure was registered on the south side of the field. Fitts completions were as follows:

E. H. Moore and others No. 3 McCarty, NW SW NE section 22-2n-7, topped Hunton lime at 3,820 feet; total depth, 3,840 feet; flowed 724 bbls. of oil in two hours and made potential of 4,622 bbls. Same operators' No. 7 Smith B, SW NE NE section 36-2-6, Hunton lime, 3,403 feet; total depth, 3,699 feet; flowed 270 bbls. of oil in two hours, gross; reacidized and made potential of 3,072 bbls. Same operators' No. 5-B Woodruff, NE NE SE section 29-2n-7, Hunton lime, 3,257 feet; Sylvan shale, 3,527 feet; total depth, 3,530 feet; acidized and flowed 338 bbls. of oil in 1½ hours, gross; potential, 2,609 bbls.

Sinclair Prairie Oil Co. No. 18 Woolley A, NW SW SW section 22-2-7, Hunton lime, 3,497 feet; total depth, 3,586 feet; acidized; flowed 617 bbls. of net oil in one hour; potential, 4,031 bbls. Same company's No. 19 Woolley A, SE NW SW section 22-2-7, Hunton lime, 3,567 feet; total depth, 3,690 feet; acidized; flowed 314 bbls. of oil, gross, in two hours; potential, 2,590 bbls. Same company's No. 14 Woolley B, NW SE SW section 22-2-7, Viola lime, 4,035 feet; Bromide, 4,333 feet; total depth, 4,400 feet; plugged back to 4,223 feet; acidized; flowed 685 bbls. of oil in two hours; potential, 2,582 bbls.

Magnolia Petroleum Co. No. 5 Smith, NE SE NW section 28-2-7, Hunton lime, 3,289 feet; Sylvan shale, 3,547 feet; total depth, 3,550 feet; acidized; flowed 535 bbls. of oil in one hour, gross; potential, 3,324 bbls. Same company's No. 2 Sheldon, SW SE SW section 28-2-7, Viola lime, 3,572 feet; Bromide, 3,840 feet; McLish, 4,025 feet; total depth, 4,292 feet; acidized; flowed 499 bbls. of oil in two hours, gross; potential, 1,597 bbls.

Loual Drilling Co. No. 4-A Harden, NE SW NW section 30-2-7, Hunton lime, 3,435 feet; Sylvan shale, 3,718 feet; total depth, 3,720 feet; acidized; potential, 2,495 bbls. of oil. H. L. Blackstock and others No. 2-A Harden, NE SE NW section 30-2-7, Hunton lime, 3,426 feet; Sylvan shale, 3,740 feet; total depth, 3,745 feet; acidized; potential, 3,303 bbls. of oil.

E. H. Moore and others No. 5 Mack, SW SW SE section 28-2-7, on the south side of the field, topped Arbuckle lime at 4,990 feet; total depth, 5,356 feet; plugged back to 4,120 feet; shot; cemented back to 4,111 feet, found Cromwell sand, topped at 5,930 feet, dry, and was abandoned.

Old Well Produces

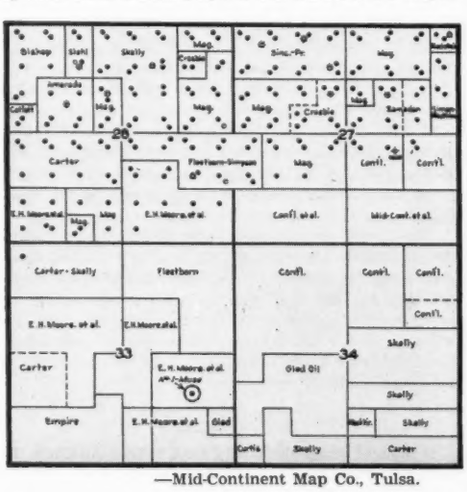
Burke-Greis Oil Co. No. 6 Chambers, SW NW NW section 36-2-6, an old well, was plugged back from 4,830 feet to 2,126 feet; was recompleted at 3,966 feet; shot, acidized two times and made potential of 4,234 bbls.

In the Jesse pool, Continental Oil Co. No. 1-A Helm, NW SW SE section 2-1n-7, topped Viola lime at 4,169 feet; Bromide, 4,438 feet; total depth, 4,564 feet; flowed 54 bbls. of oil by heads in 24 hours; acidized and flowed 115 bbls. of oil in 24 hours. Same operator's No. 1 Helm, NW SE SE section 2-1n-7, topped Viola lime at 4,161 feet; Bromide, 4,398 feet; McLish, 4,665 feet; total depth, 4,670 feet; acidized; flowed 135 bbls. of oil, gross, with water; plugged back to 4,410 feet; acidized and reacidized; pumped 189 bbls. of oil in 24 hours.

W. A. Delaney and others No. 1 Starrett, SW SE NE section 21-5-5, had Viola lime at 2,538 feet; total depth, 2,597 feet; swabbed 16 bbls. of oil in four hours; shot and was completed as a 65-bbl. pumper. D. N. Campbell and others No. 1 Parker, NE NE SE section 30-5-5, had 1,000 feet of water in the hole and was dry and abandoned at 2,731 feet, total depth.

O. H. P. Thomas No. 6 Gilmore, C S half NW NW section 28-5-8, Allen area, had Allen sand at 817 feet; total depth, 842 feet; shot and pumped 1 bbl. of oil in 24 hours. Mary F. Oil Co. No. 1-A Fernado, C W half NW SW section 13-5-8, found no sand and was abandoned at 876 feet, total depth.

New work in Pontotoc County; E. H. Moore No. 14 Akers, NW SE NE section 36-2n-6, building rig; same operator's No. 8 Smith, B, NW NE NE section 36-2-6, location; Magnolia Petroleum Co. No. 2 Lewis, SE SW SW section 19-2-7, cellar and pits; E. H. Moore and others No. 1-A Woolley-Burris, C N half S half section 22-2-7, cellar and pits; Sinclair Prairie Oil Co. No. 2 McCarty, SW NW NE section 22-2-7, cellar and pits; Magnolia Petroleum Co. No. 31 Metropolitan Life, SE NW SW section 27-2-7, building rig; Fleetborn & Simpson No. 7-A Woolley, SE NE SE section 28-2-7, rig; E. H. Moore No. 6-A Wirick, NE NE SW section 29-2-7, cellar and pits; Magnolia Petroleum Co. No. 14 Harden, NW NE NW section 30-2-7, building rig; W. A. Delaney and others No. 1 McClure, SW SW NW section 22-5-5, location.



—Mid-Continent Map Co., Tulsa.

A new producing area was opened south of the Fitts field, Pontotoc County, at E. H. Moore No. 1 Muse, section 33-2n-7

Estimated Daily Production

Estimated daily average production of Oklahoma for the week ending April 3, and for the preceding week, was as follows:

	Barrels	
	April 3	Mar. 27
Allen	6,450	6,525
Burbank	7,650	7,600
South Burbank	16,100	16,125
Balance Osage	21,500	21,750
Blackwell district	5,150	5,150
Bristow-Slick	7,925	7,975
Chandler	3,450	3,500
Crescent	14,550	15,625
Cromwell	3,300	3,225
Cushing-Shamrock	10,200	10,200
Duncan district	3,800	3,750
Edmond	23,750	26,450
Fish	6,225	6,925
Fitts	88,375	89,700
Graham	4,750	4,800
Gray	1,400	1,375
Healdton	9,675	9,650
Hewitt	4,325	4,375
Holdenville	950	925
Keokuk	7,800	9,625
Lucien	13,225	13,500
Moore	13,700	14,675
Oklahoma City	164,400	150,800
Olympic	14,875	14,925
Papoose	875	850
Polo	1,675	1,700
Sasakwa and townsite	3,200	3,025
Sholem-Alechem	3,275	3,250
Seminole:		
Bowlegs	11,775	11,925
Carr City	6,025	5,900
Earlsboro	6,850	6,625
South Earlsboro	750	725
East Earlsboro	7,675	7,850
Little River	10,975	11,000
East Little River	1,150	1,175
Maud	875	850
Mission	2,250	2,325
Seminole	9,650	9,775
East Seminole	3,425	3,600
Searight	4,975	4,625
Total Seminole	66,375	66,375
St. Louis-Pearson	22,625	23,250
Tatums	4,950	4,750
Tonkawa-Garber-Thomas	10,500	10,600
Wewoka	3,425	3,550
Yale-Jennings	4,125	4,150
Other pools	74,175	83,700
Total Oklahoma	648,725	640,525

Okfuskee County

Six producers were completed in the Hughes County sector of the Olympic field. Blackwell Oil & Gas Co. and Phillips Petroleum Co. No. 3 Lehmer, NW SW NW section 17-10-9, had Senora sand at 1,850 feet; total depth, 1,924 feet; shot, swabbed 10 bbls. of oil in eight hours, pumped 50 bbls. in 24 hours. Ark Royalty Co. No. 4 Parsons, NW SW NE section 18-10-9; Senora sand, 1,845 feet; total depth, 1,912 feet; shot; pumped 105 bbls. of oil and 1 bbl. of water in 24 hours.

J. J. Deaner No. 4 Schultz, SW SE NW section 18-10-9, had Senora sand at 1,840 feet; was bottomed at 1,903 feet; shot; flowed 40 bbls. of oil and 50 bbls. of water in 24 hours; pumped 100 bbls. of oil and 45 bbls. of water in 24 hours. Sinclair Prairie Oil Co. No. 3 Schultz, NE NE NW section 18-10-9, found Senora sand at 1,846 feet; total depth, 1,874 feet; shot and swabbed 50 bbls. of oil, with 15 bbls. of water, in 24 hours.

Oklahoma Oil Corp. No. 2 Ott, SE NW NW section 19-10-9, had Senora sand at 1,875 feet; was bottomed at 1,900 feet; swabbed 57 bbls. of oil and 100 bbls. of water in 24 hours. Manahan Oil Co. No. 1 Dolin, SE NE

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THE OIL AND GAS JOURNAL

NE section 24-10-8, pumped 35 bbls. of oil and 5 bbls. of water in 24 hours after shooting. Top of Senora sand was 1,882 feet; total depth, 1,892 feet.

J. F. Watson and others No. 1 Lindley, NE SE SE section 26-10-8, west of the field, had Senora sand at 1,835 feet and was dry and abandoned at 1,843 feet, total depth.

First reports of new work in Okfuskee County: Manahan Oil Co. No. 2 Dolin, NE cor. section 24-10-8, location; Champlin Refining Co. No. 1 Mandie, SE SE SW section 7-10-9, cellar and pits; Blackwell Oil & Gas Co. and Phillips Petroleum Co. No. 3 Lehmer B, SE SW SW section 18-10-9, rig; Hayes & Scruggs No. 1 Durkee, SE SE SW section 21-10-11, an old well being deepened, drilling at 2,835 feet; Kingwood Oil Co. No. 1 Wright, NE NE SE section 25-11-9, location.

Seminole County

Completions in Seminole County included two producers in the North Bethel pool. Amerada Petroleum Corp. and others No. 1 Martha, NE SW NW section 36-10-7, on the south side of the pool, found Cromwell sand at 3,631 feet; total depth, 3,647 feet; and made potential of 690 bbls. of oil.

Gulf Oil Corp. No. 1 McIntosh, SE cor. section 26-10-7, extended North Bethel production one location westward. It had Cromwell sand at 3,609 feet; was bottomed at 3,627 feet; swabbed 40 bbls. of oil and 70 bbls. of water in 17 hours; was put on pump and pumped 124 bbls. of oil and 149 bbls. of water in 24 hours.

In the Wetley area, Francis Oil Co. No. 3 Ragland, SW NW NW section 19-5-6, topped Hunton lime at 2,354 feet; Sylvan shale, 2,542 feet; total depth, 2,552 feet; plugged back to 2,542 feet, shot and acidized and flowed 500 bbls. of oil gross in 24 hours, and died; later, flowed 35 bbls. of oil in 24 hours.

Sinclair Prairie Oil Co. No. 1 Lindsay, NW SW NW section 3-8-7, was dry and abandoned at 4,413 feet, total depth.

Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 Fore A, SW cor. section 12-9-7, wildcat, topped Wewoka sand at 1,145 feet; Calvin, 1,940 feet; lime, 3,045 feet; Wapanucka, 3,388 feet; Cromwell sand, 3,400 feet; water intruded and it was dry and abandoned at 3,408 feet, total depth.

The following new operations in Seminole County were reported: Francis Oil Co. No. 3 Wetley, SW SE NE section 24-5-5, location; Jack Lynch and others No. 2 Hyde, SE SW NE section 24-5-5, location; W. C. McBride, Inc., No. 1 Swan, SE SE NW section 24-5-5, location; Texhoma Drilling Co. No. 1 Fleet, NE NE SW section 24-5-5, moving in rig; Scroggins No. 1 Huddleston, SW NE SW section 3-6-6, drilling at 602 feet; Magnolia Petroleum Co. No. 2 Crouse, SW SE SE section 2-7-6, an old well being deepened, fishing at 4,193 feet; Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 Reed, SE SW SE section 19-10-8, wildcat, cellar.

Logan County

Eason Oil Co. and others No. 1 Smith, SW NW NW section 13-17-1w, one-half mile east extension to the Langston pool, Logan County, was completed at 5,128 feet, total depth, with potential of 10,165 bbls. of oil. It topped Wilcox sand at 5,112 feet. It flowed 1,906 bbls. of oil in four and one-half hours; later, flowed 2,734 bbls. of oil in 13½ hours through 1-inch choke. Gravity of the oil was 46.3 at 66 degrees.

H. L. Blackstock No. 1 Prince, SE NE SW section 11-17-3w, wildcat, topped Pawhuska at 2,610 feet; Carmichael, 3,245 feet; Oread, 3,440 feet; Tonkawa, 3,890 feet; Avant, 4,190 feet; Checkerboard, 4,820 feet; Oswego, 5,270 feet; Mississippi, 5,600 feet; Woodford, 5,778 feet; Hunton, 5,857 feet; Sylvan, 5,890 feet; Viola, 6,000 feet; Dense, 6,075 feet; Dolomite, 6,120 feet; first Wilcox, 6,156 feet; second Wilcox, 6,230 feet; total depth, 6,482 feet, dry and abandoned.

New work in Logan County: Southwest Petroleum Co. No. 1 Cemetary, NE NE SE section 14-17-1w, Langston area, digging cellar; Champlin Refining Co. No. 3 Pfeiffer, SE NE NW section 4-19-2w, Lucien, rig on ground; Phillips Petroleum Co. No. 3 Pfeiffer, SW NW NE section 4-19-2w, location; Eason Oil Co. and others No. 1 Sisters, SW cor. section 24-17-1w, wildcat south of Langston, building rig.

Noble County

Phillips Petroleum Co. and Shell Petroleum Corp. No. 6 McCaughtry, SW SE NE section 21-23-2w, Billings area, Noble County, flowed 751 bbls. of oil in five hours after stopping at 4,334 feet, total depth, and made potential 2,608 bbls. Wilcox sand was topped at 4,291 feet.

Tide Water Oil Co. was digging cellar at No. 4 Hackett, NE SW SE section 21-23-2w, new operation in the Billings pool.

Osage County

Lewis Production Co. No. 10 Wilson, NW NE NE section 28-24-7, an old well in the Naval Reserve pool, Osage County, was deepened from 2,741 feet, old total depth, to 2,764 feet in sand; shot, flowed 110 bbls. of oil in 24 hours and was recompleted.

Peters Petroleum Corp. and Sinclair Prairie Oil Co. No. 14 Osage, SE NW NE section 24-24-7, was completed as a repressure well at 771 feet.

New work in Osage County: Johnson Oil Refining Co. No. 10 Osage, SE NE SW section 30-21-9, location; Gulf Oil Corp. No. 6 Bearcat, NE NW NW section 20-22-10, an old well, preparing to deepen; Lewis Production Co. and Peters Petroleum Corp. No. 3 Drummond, NW SW SW section 27-24-7, location; Sun Oil Co. No. 1 Osage, SW SW NE section 18-24-10, an old well, preparing to deepen; Wolverine Oil Co. and others No. 45 North Avant Unit, NW SE SW NE section 31-24-12, location; same operators' No. 46 North Avant Unit, NE SE SW NE section 31-24-12, pits; same operators' No. 47 North Avant Unit, NE SW SE NE section 31-24-12, drilling at 225 feet; Link Oil Co. No. 20 Osage, NE NW SW NW section 34-25-9, location; Keener Oil & Gas Co. No. 26 Osage, SE SE NE section 15-29-10, location.

Oklahoma County

British American Oil Producing Co. No. 2 Parkway, SW NW SW NE section 27-12-3w, was the only completion in the Oklahoma City field, Oklahoma County. It had best pay and second Wilcox sand at 6,380 feet; total depth, 6,522 feet; flowed 310 bbls. of oil in eight hours and 50 minutes with drill pipe in the hole, and made potential of 7,132 bbls.

The following new work in Oklahoma County was reported: Anderson & Kerr No. 1 Community, NW SW SE section 27-12-3w, location; same operators' No. 2 Community, SE NW SW SE section 27-12-3w, building rig; same operators No. 1 fee, SE NW NW SE section 27-12-3w, building rig; same operators' No. 1 Frasier, NW NE SE section 27-12-3w, building rig; Inland Development Co. No. 2 Harn, SW SE SE NW section 27-12-3w, rig; Texas Co. No. 3 School Land, NE SE NE section 36-14-4w, rig on ground.

Hughes County

Harmann No. 3 Jacobs, NE NE NW section 15-7-8, Holdenville area, Hughes County, had Booch sand at 2,873-2,969 feet; total depth, 2,970 feet; was shot and pumped 30 bbls. of oil and 15 bbls. of water in 24 hours, completed. Marbett Oil Co. No. 1 Goat, SW NE SE section 11-7-8, had sand at 1,803-23 feet; total depth, 1,829 feet; and produced 6,000,000 feet of gas.

Texas Co. No. 1 Baskins, C NW NE section 9-8-10, was bottomed at 3,180 feet; salt water intruded; it was plugged back to 3,118 feet; shot; and was mudded to top and temporarily abandoned.

Carson Oil Co. No. 1 Lyter, NE NW SW section 31-8-12, wildcat, topped Atoka at 2,470 feet; Gilcrease series, 2,955 feet; Wapanucka, 3,370 feet; Cromwell, 3,699 feet; Pennsylvania Caney, 3,870 feet; Mississippi Caney, 4,080 feet; Mayes, 4,400 feet; Sycamore, 4,565 feet; Woodford, 4,570 feet; Hunton, 4,652 feet; Sylvan, 4,660 feet; Viola, 4,709 feet; Dense, 4,765 feet; Dolomite, 4,790 feet; Wilcox sand, 4,912 feet; total depth, 4,940½ feet, and was dry and abandoned.

W. W. Bassett No. 1 Field, C NW SW section 11-9-11, wildcat, was temporarily abandoned without making hole.

Two new operations were reported in Hughes County. Mid-Continent Petroleum Corp. No. 2 Elizabeth, NW NE SW section 20-7-8, Fish area, had spudded. Manahan Oil Co. No. 8 Oliphant B, SW NE SE section 11-9-8, Olympic area, was a location.

Lincoln County

Skelly Oil Co. No. 1 Spear, SE SE NE section 20-17-3e, northern Lincoln County, topped Dolomite at 4,535 feet; first Wilcox sand, 4,583 feet; second Wilcox sand, 4,629 feet; total depth, 4,648 feet; plugged back to 4,600 feet; drilled out to 4,630 feet, and plugged back to 4,618 feet when water intruded. After perforating casing and shooting, it swabbed 35 bbls. of oil naturally; was acidized, and flowed 175 bbls. of oil a day through tubing choke, completed. It opened a new producing sector.

Magnolia Petroleum Co. No. 9 Ross Wagner, NW SW SE section 2-14-3e, Chandler area, had Skinner sand at 4,181 feet; Bartlesville, 4,374 feet; total depth, 4,431 feet; plugged back to 4,220 feet; shot; swabbed 18 bbls.

of oil in 24 hours and pumped 15 bbls. in 24 hours.

One new test in Lincoln County was reported. Magnolia Petroleum Co. No. 11 Ross, SW NE SE section 2-14-3e, was a location.

Pottawatomie County

The only completion in Pottawatomie County was Magnolia Petroleum Co. No. 3 Caudle, NE NW SW section 13-7-4e, St. Louis area. It topped Simpson Dolomite at 4,048 feet; Wilcox sand, 4,094 feet; was bottomed at 4,139 feet; swabbed 65 bbls. of oil in 24 hours; acidized and pumped 172 bbls. of oil net in 24 hours.

New Pottawatomie County work: Mid-Continent Drilling Co. No. 1 Bettis, NW SW SE section 17-7-4, an old abandoned well, being cleaned out to deepen; Indian State Oil Co. No. 1 Gunter, NE SE SW section 32-11-4, cellar and pits; same company's No. 2 Junk, NW SE SE section 32-11-4, location.

Creek County

Anthony No. 1 Strozier, SW SW NE section 12-16-11. Mounds area, had sand at 2,350-55 feet, total depth; swabbed and flowed 100 bbls. of oil in 24 hours, and was completed as a 35-bbl. per day well. Sinclair Prairie Oil Co. No. 1 fee, SE SW SW section 24-17-7, Cushing field, produced 4,830,000 feet of gas and was completed at 2,456 feet, total depth, in Wheeler sand topped at 2,400 feet. J. E. Crosbie and Sinclair Prairie Oil Co. No. 1 Bailey, NE NW NW section 28-16-8, wildcat, topped Bartlesville sand at 2,928 feet; upper Dutcher sand, 3,220 feet; lower Dutcher, 3,240 feet; had Wilcox sand at 3,800-08 feet, total depth, and was dry and abandoned.

Three new operations in Creek County were reported: Sinclair Prairie Oil Co. No. 11 Jones, CWL SE NW section 4-17-7, location; same company's No. 7 Tucker, NE NE NW section 10-17-7, an old well, pulling tubing to deepen; Mid-Continent Petroleum Corp. No. 18 Barnett, NW SE SE NE section 22-17-7, drilling at 330 feet.

Okmulgee County

F. D. Misener No. 1 Larney, NE cor. section 28-15-14, Bald Hill area, Okmulgee County, had Glenn sand at 1,643-67 feet; total depth, 1,668 feet; pumped 4 bbls. of oil daily and was completed. Lampert No. 1-A Franklin, SE SW SW section 27-14-14, had sand at 1,150-70 feet, total depth, and was completed as an 8-bbl. pumper. Burns & Black No. 1-A Lunsford, NE SE SW section 16-14-11, had Dutcher sand at 2,398 feet; total depth, 2,440 feet; pumped 10 bbls. of oil daily, completed. W. B. Pine No. 2-A Beams, SE NW SW SE section 4-15-14, was dry and abandoned at 1,680 feet, total depth.

Two new tests were reported in Okmulgee County. Craig and others No. 1-A Dunn, C N half NW NE section 21-13-14, was drilling at 100 feet. Steckoll and others No. 1-A Davis, CEL NE NW section 17-14-13, was a location.

Muskogee County

A. D. Spears and others No. 1 Robbins, NW cor. section 20-15-20, Muskogee County wildcat, topped Hunton lime at 1,340 feet; Sylvan shale, 1,380 feet; Viola, 1,427 feet; Wilcox sand, 1,472 feet; Tyner, 1,477 feet; Burgen, 1,585 feet; Turkey Mountain, 1,677 feet; Arbuckle lime, 1,710 feet; total depth, 1,811 feet, water intruded and it was dry and abandoned.

Lightner and others No. 2-A Barnett, NW NE NW section 19-14-16, Boynton area, had a hole full of water and was dry and abandoned at 1,916 feet, total depth.

One new Muskogee County test was reported. Armstrong & McLeod No. 1-A Merriweather, NW SE SE SE section 16-14-16, was moving in machine.

Tulsa County

Klingensmith No. 1 Gilcrease, SW NW SW section 34-17-12, Independent pool, Tulsa County, had a hole full of water in Wilcox sand at 2,317-25 feet and was abandoned. S. W. Anthony No. 1 Gilcrease, SW cor. section 34-17-12, an old well, was deepend from 1,670 feet to Wilcox sand at 2,278 feet; new total depth, 2,292 feet; had initial production of 200 bbls. of oil daily and was recompleted.

Pawnee County

Peter Adamson, Jr., No. 8 Thomas, SW SW NE section 25-21-8, Pawnee County, had Skinner sand at 2,105-35 feet; was bottomed in Bartlesville sand at 2,259 feet; plugged back to 2,252 feet; pumped 6 bbls. of oil daily and was completed.

Forrest Development Corp. No. 1 Markham, SW NE SE section 10-21-5, wildcat, topped Checkerboard at 2,620 feet; lime, 2,785 feet; Bartlesville sand, 3,141 feet; water intruded and it was dry and abandoned at 3,185 feet, total depth.

J. L. Reynolds No. 13 Hamilton, NW SW NE section 24-20-8, an old well being deepened, was drilling at 1,325 feet. Peter Adamson, Jr., No. 1-A Green, NW NW SE section 25-21-8, was rigging up machine.

LeFlore County

LeFlore Gas Co. No. 1 Belt, SW SW SE section 25-9-26, LeFlore County, had sand at 4,387 feet; casing parted at 4,417 feet, total depth, and it was abandoned.

Marshall County

Levelle Coal Co. No. 4 Cox, SE SE NE section 26-7s-5e, Marshall County, was dry and abandoned at 425 feet, total depth.

Only new work in Marshall County was at Levelle Coal Co. No. 1 Pershica, C NE SW section 26-7s-5e, a machine.

Stephens County

George L. Pace and others No. 13 Payne, SE NW NW section 28-2s-7w, Comanche area, Stephens County, had sand at 1,699-1,703 feet; total depth, 1,706 feet, and was completed as a 25-bbl. pumper. Raizen Brothers No. 12 Price, NW SE SW section 10-3s-5w, Loco area, had sand at 1,438-51 feet, total depth; pumped 17½ bbls. of oil in 24 hours and was completed.

New work in Stephens County: Mudge Oil Co. No. 44 Woods, C NE NW section 26-1s-5w, drilling at 890 feet; Raizen Brothers No. 14 Price, NE SE SE SW section 10-3s-5w, location; Charles Newsom No. 1 Pfile, SW cor. section 1-2s-7w, wildcat, derrick.

Jefferson County

Capt. Fields and others No. 1 Trout, NE NE SW section 5-8s-7w, Jefferson County wildcat, was abandoned at 2,260 feet, total depth, in shale, when water rose 1,980 feet in the hole.

The following new work in Jefferson County was reported: Bridwell No. 11 Wahlgemuth, NE NW NW section 30-6s-5w, drilling at 993 feet; Farlyn Oil Co. No. 41 Seay, SE SW NE SE section 3-7s-5w, set casing and waiting on cement at 431 feet; C. O. Smith No. 1 Seay, NE NE SE SW section 3-7s-5w, drilling at 1,400 feet.

Beckham County

Carter Oil Co. No. 1 Robertson, C SW NW section 2-9-25w, Sayre area, Beckham County, was bottomed at 3,997 feet; plugged back to 3,600 feet; perforated casing; produced 6,844,000 feet of gas and was completed.

Carter Oil Co. No. 1 Garrett, NE cor. section 11-7-25w, Beckham County wildcat, topped anhydrite at 1,390 feet; Dolomite, 1,850 feet; Granite Wash, 2,109 feet; bailed water and was dry and abandoned at 2,226 feet, total depth, in shale.

Jackson County

Gulf Oil Corp. No. 1 Abernathy, NW NE SW section 12-1n-20w, Altus area, Jackson County, topped Arbuckle lime at 3,370 feet, and was dry and abandoned at 3,816 feet, total depth, in lime.

Various First Reports

Magnolia Petroleum Co. No. 1 Brown, SW SE NE section 21-3s-18w, was location for a wildcat in Tillman County.

In Cotton County, Shasta Oil Co. No. 20 Patterson, NW SE NE NW section 1-2s-10w, was drilling at 1,700 feet; same company's No. 21 Patterson, NW NE NE NW section 1-2s-10w, was a location.

In Murray County, O. O. Owens No. 1 Fryer, NE SE NE section 34-1s-3e, wildcat, had built derrick.

In Payne County, Sun Oil Co. No. 1 Worth, SE SW NE section 6-19-5e, was a location in the Garr area.

In the Moore pool, Cleveland County, Anderson & Prichard No. 3 State, SW NW SE section 16-10-2w, was digging cellar.

Canadian Franchises

Ratepayers of Delaware police village have approved granting a natural gas franchise to Union Gas Co. of Chatham.

The Bow Island town council has defeated a proposal to reduce the local natural gas rate from 30 to 25 cents.

LUFKIN
TAPES - RULES - TOOLS

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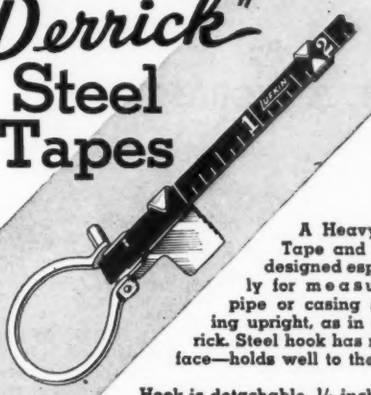

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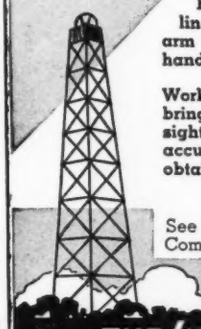

See listings in Composite Catalog of Oil Field and Refinery Equipment.

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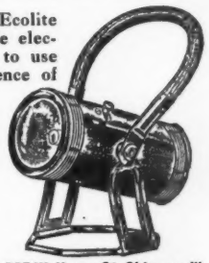

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By
T. R. INGRAM

BIG WELLS IN GARLAND AND LANCE CREEK, WYO., POOLS

DENVER, Colo., Apr. 5.—Colorado had no completions or new locations. Morgan County wildcat has a small show of oil in Upper Pierre, and the South Park Oil Co. No. 1 Lemar, Hartsel district, had 300 feet of oil after standing for three hours.

The Stock Oil Co. No. 1-B Allen, Garland dome, Wyoming, flowed 1,700 bbls. from the Madison in 16 hours. The Ohio Oil Co. has a 25-bbl. well in its No. 1 Harrison & Cooper, Rock River field. The Continental Oil Co. completed a 2,000-bbl. well in Lance Creek in its No. 3-B Schuricht. Two new locations were released in Carbon County, one in Converse County, two in Niobrara County and two in Uinta County.

The Cut Bank field in Montana had three completions and four new locations and the Kevin-Sunburst field had one completion and two new locations. R. C. Tarrant No. 1 Kelly, Mosser dome, Yellowstone County, was completed for 70 bbls. per day.

NEW MEXICO

The Texas Co. and others No. 1 Alexander, SE NW section 5-21-37, new sand pool opener 2 miles north of the Hardy pool, Lea County, flowed 96 bbls. of 43 gravity oil through tubing in 24 hours. Operators were reported preparing to pull tubing and shoot the well. Top of sand pay was 3,705 feet; total depth, 3,755 feet. It found a 40-foot section of sand pay. The new area is in a chain of sand pools flanking lime production on the east, extending from Lea County southward through Ward County, Texas.

Continental Oil Co. No. 1 Skaggs, C NE SE section 24-20-37, wildcat east of the Monument-Eunice gap, was completed for initial production of 21 bbls. an hour through choke on tubing, after third treatment with 4,000 gallons of acid. It previously had flowed 120 bbls. of oil in six hours after acidizing. It was bottomed at 3,900 feet in lime.

Continental Oil Co. No. 1 Danciger, C NW NE section 8-22-36, south offset to the discovery well in the Farney pool, northwest of Henry townsite, had pay at 3,709-32 feet, total depth, and flowed 43 bbls. of oil an hour naturally through tubing choke.

Amerada Petroleum Corp. No. 1 Laughlin, NW NW section 9-20-37, Monument area, was completed for initial production of 1,155 bbls. of oil in 12 hours, 35 minutes, naturally, through choke. Total depth was 3,860 feet. It is on the east edge of production. Same operator's No. 4 Lambert, C SE NE section 6-20-37, was bottomed at 3,880 feet, and was completed with initial production of 498 bbls. of oil naturally, through choke in 12 hours.

Continental Oil Co. No. 7-D-15 State, C NW SE section 15-21-36, Eunice area, flowed 102 bbls. of oil an hour through choke on tubing and was completed at 3,878 feet, total depth.

Other Monument completions: Magnolia Petroleum Co. No. 2 Cary, section 21-22-37, topped lime at 2,735 feet; pay, 3,536 feet; total depth, 3,620 feet; flowed 132 bbls. of oil daily through choke. Phillips Petroleum Co. No. 1 Mexico, NE cor. section 18-20-37; topped pay, 3,781 feet; total depth, 3,852 feet; flowed 444 bbls. of oil in three hours, naturally, through tubing. Gulf Oil Corp. No. 3 Whitmire, C SE NW section 8-20-37; topped lime, 2,668 feet; pay, 3,835 feet; total depth, 3,880 feet; flowed 50 bbls. of oil in three hours through tubing.

Skelly Oil Co. No. 3 Van Etten, C SE SW section 9-20-37, topped pay at 3,805 feet; total depth, 3,868 feet; flowed 399 bbls. of oil, naturally, in three hours. Ohio Oil Co. No. 3 State McGrail, C NE SW section 26-19-36, had lime at 3,036 feet; total depth, 4,005 feet; acidized and flowed 40 bbls. of oil an hour, through choke. Gulf Oil Corp. No. 4-F Graham State, C SW SE section 36-19-36; pay, 3,870 feet; total depth, 3,915 feet; flowed 132 bbls. of oil in four hours through tubing. Ohio Oil Co. No. 2 Laughlin, C SE NW section 9-20-37, had pay at 3,795 feet; total depth, 3,870 feet; flowed 109 bbls. of oil an hour, naturally, through choke.

In the Eunice district, Two States Drilling Co. and others No. 1 State, C SE NW section 11-21-36, topped pay at 3,735 feet; total depth, 3,872 feet, and flowed 121 bbls. of oil in eight hours and 30 minutes, naturally. Texas Co. No. 6 Lieu Lands, C NW NE section 20-20-37, flowed 340 bbls. of oil in four hours after acidizing; top of pay was 3,715 feet; total depth, 3,860 feet.

J. E. Farrell No. 1-C Walden, section 15-22-37, Sims area, topped pay at 3,740 feet, was bottomed at 3,686 feet, and flowed 60 bbls. of oil daily, through tubing.

Humble Oil & Refining Co. No. 2-F State, section 17-20-37, Monument area, topped lime at 2,512 feet; had pay at 3,760 feet; was bottomed at 3,855 feet and, after acidizing, flowed 98 bbls. of oil in four hours, through choke.

In Eddy County, H. C. Wells and others No. 1 State, NW SW NW section 19-20-30, was abandoned when sulfur water intruded at 1,700 feet, total depth. Neil Wills and others No. 1 Chase, C NW SW section 6-20-30, wildcat, was abandoned when sulfur water intruded at 1,684-85 feet, total depth. It had showings of oil at 1,471 feet and 1,587 feet, and a slight showing of oil at 1,665 feet.

Monument Area

Continental Oil Co. No. 11 Sanderson A, C SE SE sec. 11-20-36. T.D. 3,871 ft.; running tbg.
Gulf Oil Corp. No. 2 Hatchett, C SW NW sec. 33-19-37. Coring 3,894 ft.
Amerada Pet. Corp. No. 6 Andrews, C SW SW sec. 12-20-36. T.D. 3,873 ft.; to reset packer.
Amerada Pet. Corp. No. 5 Byrd, C SE NW sec. 12-20-36. T.D. 3,875 ft.; swabbing.
Gulf Oil Corp. No. 5 Anderson, C SE NW sec. 17-20-37. Drlg. 3,265 ft.
Phillips Pet. Co. No. 2 Mexico, C SW NE sec. 18-20-37. T.D. 3,780 ft.; set csg.
Amerada Pet. Corp. No. 4 Phillips, C NW NE sec. 1-20-36. Drlg. 2,703 ft.
Amerada Pet. Corp. No. 1-X State, C NW SW sec. 16-20-37. T.D. 2,428 ft.; set csg.
Amerada Pet. Corp. No. 8 Weir, C NW NW sec. 35-19-36. Drlg. 3,778 ft.
Barnsdall Oil Co. No. 8 Cooper, C SE SE sec. 12-20-36. Drlg. 3,160 ft.
Continental Oil Co. No. 16-C-1 State, C SW NW sec. 16-20-37. T.D. 3,370 ft.; repairing machine.
Gulf Oil Corp. No. 1 Bates, C SE SE sec. 26-19-36. T.D. 3,832 ft.; set csg.
Gulf Oil Corp. No. 1-D Orcutt, C NW NE sec. 13-20-36. Drlg. 3,733 ft.
Phillips Pet. Co. No. 1 Edna-State, C NW NW sec. 30-20-37. Drlg. 2,715 ft.
Phillips Pet. Co. No. 1 Mexico-State, C NE NE sec. 30-20-37. Drlg. 3,315 ft.
Repollo Oil Co. No. 4-A Phillips, NW SW sec. 31-19-37. Drlg. 2,992 ft.
Tide Water Oil Co. No. 2 Laughlin, C NE SW sec. 4-20-37. T.D. 232 ft.; set csg.
Amerada Pet. Corp. No. 3-V State, NE sec. 36-19-36. Drlg. 1,055 ft.
Amerada Pet. Corp. No. 3-F State, SW sec. 36-19-36. T.D. 2,373 ft.; set csg.
Stanolind O. & G. Co. No. 2 Gillully, SW sec. 33-20-37. Drlg. 2,550 ft.
Shell Pet. Corp. No. 3-M State, NE sec. 1-21-36. Drlg. 2,675 ft.
Amerada Pet. Corp. No. 2-A Byrd, sec. 12-20-36. Derrick.
Amerada Pet. Corp. No. 2 Laughlin, sec. 9-20-37. Derrick.
Gulf Oil Corp. No. 6 Anderson, sec. 17-20-37. T.D. 2,400 ft.; set csg.
Gulf Oil Corp. No. 1 Bell-State, sec. 36-20-36. Drlg. 3,062 ft.
Gulf Oil Corp. No. 2-F Bell-State, sec. 36-20-36. Derrick.
Gulf Oil Corp. No. 3-F Bell-State, sec. 36-20-36. T.D. 1,181 ft.; set csg.
Humble O. & R. Co. No. 5 Laughlin, sec. 4-20-37. Drlg. 3,656 ft.
Humble O. & R. Co. No. 3-F State, sec. 17-20-37. R.U.R.
Phillips Pet. Co. No. 1 Hudson-State, sec. 30-20-37. T.D. 149 ft.; set csg.
Phillips Pet. Co. No. 1 Quapaw-State, sec. 10-20-37. T.D. 17 ft.; set csg.
Repollo Oil Co. No. 4 Byrd, sec. 11-20-36. Drlg. 2,470 ft.
Texas Co. No. 2-K State, sec. 18-19-37. Drlg. 381 ft.
Amerada Pet. Corp. No. 6 Byrd, C SW SE sec. 12-20-36. Derrick.
Gulf Oil Corp. No. 1-C Kutter State, C SE NE sec. 18-19-37. Derrick.
Gulf Oil Corp. No. 7 Anderson, C SE NE sec. 17-20-37. Derrick.
Gulf Oil Corp. No. 2 Smith, C NE NE sec. 34-19-36. Drk.
Shell Pet. Corp. No. 2-E State, C NW NW sec. 13-20-36. Drk.
Shell Pet. Corp. No. 4-K State, C NW NE sec. 36-20-36. Drk.
Tide Water Associated Oil Co. No. 1-J State, C SW NW sec. 17-19-37. R.U.R.
Repollo Oil Co. No. 7 Barber, sec. 8-20-37. Killed gas at 2,616 ft.; rigging up for squeeze job.
Continental Oil Co. No. 4-B-18 Britt, sec. 18-20-37. Cellar and pits.
Continental Oil Co. No. 4-A-11 Sanderson, sec. 11-20-36. Cellar and pits.
Gulf Oil Corp. No. 1-G Bell-State, sec. 23-21-36. Drk.
Ohio Oil Co. No. 3 Laughlin, sec. 9-20-37. Moving in tools.
Ohio Oil Co. No. 1 State-Hansen, sec. 16-20-37. Cellar and pits.
Texas Co. No. 7 Lieu-Lands, sec. 20-20-37. Moving in tools.

Chaves County

J. & L. Drlg. Co. No. 1 Hurd, C SE NW sec. 14-11-26. T.D. 190 ft.; mixing mud.
Elliott No. 1 State, NW sec. 16-8-23. T.D. 773 ft.; fishing.
English & Harmon No. 1 Billingslea, SE sec. 9-15-29. T.D. 60 ft.; S.D.O.
Warman Oil Co. No. 1 Weldan & Hoar, sec. 9-14-25. T.D. 1,732 ft.; S.D.

Eunice Area

Getty Oil Corp. No. 1 State D, C SE NE sec. 32-20-37. T.D. 3,860 ft.; S.D. for orders.
Gulf Oil Corp. No. 4 Leonard, C SW NE sec. 22-21-36. T.D. 3,905 ft.; P.B. to 3,892 ft.; testing.
Jim Murray No. 4 State-Wallace, sec. 3-21-36. Cellar.
Gulf Oil Corp. No. 1 Bell-Ramsey B, C SW SW sec. 20-20-37. T.D. 3,840 ft.; C.O.
Amerada Pet. Corp. No. 4-W State, C SE SE sec. 30-20-37. Drlg. plug 3,748 ft.
Gulf Oil Corp. No. 12-C Arnott-Ramsey, C NW SE sec. 21-21-36. Drlg. 1,623 ft.
Shell Pet. Corp. No. 2-H State, CWL NE NE sec. 13-21-35. T.D. 3,900 ft.; running tbg.
Atlantic Ref. Co. No. 5 State L, C NW NW sec. 3-21-36. T.D. 3,830 ft.; to deepen.
Gulf Oil Corp. No. 2 White, C NE SE sec. 25-20-36. T.D. 3,740 ft.
Mid-Continent Pet. Corp. No. 1 Reener, C NW NW sec. 29-20-37. Drlg. 3,343 ft.
Texas Co. No. 5 State-Aggies, SE NE SE sec. 31-20-37. Drlg. plug 3,740 ft.
Tide Water Associated Oil Co. No. 1 Marshall, C SW NE sec. 13-21-36. Drlg. 3,150 ft.
Continental Oil Co. No. 14-B-6 Lockhart, C SW SW sec. 14-21-36. Waiting on cemente at 3,750 ft.
Continental Oil Co. No. 15-D-8 State, C SE SE sec. 15-21-36. T.D. 3,690 ft.; set csg.
Ohio Oil Co. No. 6 McDonald, C SE SW sec. 16-22-36. Cellar.
Oil Well Drlg. Co. No. 1 State A, C NW NW sec. 16-22-36. T.D. 3,725 ft.; set csg.
Stanolind O. & G. Co. No. 1 Owen, NW sec. 3-22-37. Waiting on cement at 1,179 ft.
Devonian Oil Co. No. 2 State, SE sec. 3-21-36. T.D. 3,769 ft.; set csg.
Continental Oil Co. No. 30-A-4 Lockhart, sec. 30-21-36. Drlg. 75 ft.
Two States & Southern Pet. Expl. No. 3 McQuatters, C SW NE sec. 11-21-36. Derrick.
Gulf Oil Corp. No. 13 Arnott-Ramsey, sec. 21-21-36. Loc.
Humble O. & G. Co. No. 1-G State, sec. 23-21-36. Cellar and pits.
Texas Co. No. 4 Rector, sec. 30-21-36. Drk.

Hobbs Area

Stanolind O. & R. Co. No. 9 State, sec. 9-19-38. Pits.
Stanolind O. & R. Co. No. 7-X Thorpe, sec. 18-19-37. Drlg. 2,902 ft.

Cooper Area

Southern Oil Corp. No. 1 Gates, C SW NW sec. 23-24-26. T.D. 3,514 ft.; S.D. for orders.
Amerada Pet. Corp. No. 3 Isabell, C SW NE sec. 15-24-36. R.U.R.

Sims Area

Skelly Oil Co. No. 1 R. R. Simms C, C SE SW sec. 3-23-37. T.D. 3,388 ft.; drlg. by tools at 3,355 ft.
Penrose & Rowan No. 3 Cary, C SE NW sec. 22-22-37. Drlg. 3,180 ft.
W. H. Street et al No. 1 Wood, C W½ SE NE NE sec. 22-22-37. T.D. 3,654 ft.; C.O. after shot.
J. E. Farrell No. 1-A Walden, C SW NW sec. 15-22-37. T.D. 3,551 ft.; S.D.
Skelly Oil Co. No. 4 Baker, C SW NW sec. 27-22-37. Drlg. 3,588 ft.
Texas Co. No. 1 Falby, C NE NW sec. 8-22-37. Drlg. 2,707 ft.

Skelly Oil Co. No. 1 Sticher, sec. 4-22-37. Drlg. 1,005 ft.
Gulf Oil Corp. No. 1 Davis, sec. 8-23-37. Drlg. wtr. well.
J. E. Farrell No. 2-B Walden, C NE SW sec. 15-22-37. R. U.S.T.
J. E. Farrell No. 2-C Walden, C SE SW sec. 15-22-37. T.D. 245 ft.; set csg.

Lea County—Miscellaneous

Brown & Reynolds No. 1 Parcell, C NW SE sec. 8-21-38. Wildcat; T.D. 4,401 ft.; sulfur wtr.; P.B. to 4,391 ft. for shutoff; acid.
Amon G. Carter No. 2 Elliott, C NE NW sec. 22-22-37. T.D. 3,622 ft.; fishing.
Magnolia Pet. Co. No. 1 State G, NW NW NE sec. 24-17-34. T.D. 4,905 ft.; P.B. 4,775 ft.; swbg. 45 B.O. dly.; acidized.
Culberson-Irwin & Stovall No. 3 Stuart, NE SE SW sec. 10-25-37. T.D. 2,160 ft.; set csg.
Continental Oil Co. No. 1 Wantz, C SW SW sec. 21-21-37. T.D. 3,815 ft.; to deepen.
Ohio Oil Co. No. 5 State-McDonald, sec. 16-22-36. T.D. 5,974 ft.; showing sulfur wtr. and oil.
Stanolind O. & G. Co. No. 1 Meyers, sec. 22-24-37. T.D. 3,553 ft.; flow 5 to 6 bbls. per hour.
Texas Co. No. 1 Alexander, sec. 5-21-37. T.D. 3,755 ft.; flowed 96 B.O.; to shoot.
Sun Oil Co. No. 2 Stewart, C SW NE sec. 15-25-37. Drlg. 3,148 ft.
Tide Water Associated Oil Co. No. 2 Walden, C SW NE sec. 21-22-37. T.D. 3,610 ft.; cleaning out.
Shell Pet. Corp. No. 2 Black, C SW SE sec. 21-24-27. Drlg. 3,423 ft.
Texas Co. No. 3 Sheppard B, SW NE NE sec. 5-26-37. T.D. 3,290 ft.; P.B. to 3,265 ft.; W.O.C.
J. L. Perry No. 1 Elliott, SE cor. sec. 19-21-37. Drk.
Samedan Oil Co. No. 3 Hughes, sec. 4-23-37. Drlg. 3,337 ft.
Texas Co. No. 2 Black, sec. 21-24-37. Drlg. 2,952 ft.
Gulf Oil Corp. No. 1 Hardy, C SE SW sec. 20-21-37. Drlg. 3,041 ft.
Mack & Stauffer No. 1 Grizzell, C NW NE sec. 8-22-37. Drlg. 3,665 ft.
Anderson-Prichard Oil Corp. No. 1 Wells, C SE SE sec 5-25-37. Drlg. 1,000 ft.
Herschback et al No. 1 Alston, C SW NE sec. 31-17-37. Wildcat; T.D. 1,675 ft.; rebuilding derrick.
J. C. Clower No. 2 Turner, SW SW SE sec. 29-21-37. T.D. 3,595 ft.; set csg.
Continental Oil Co. No. 4 McCallister A, C N½ NE SE sec. 24-26-36. T.D. 3,245 ft.; P.B. 3,222 ft.; W.O.C.
Williams & Cockburn No. 3 Miller, C SW SW sec. 23-17-32. Drlg. 3,470 ft.
Gulf Oil Corp. No. 1 Mattern B, NE NE SE sec. 30-21-37. T.D. 3,655 ft.; set csg.
Ohio Oil Co. No. 1 Grizzell, C SW SE sec. 5-22-37. T.D. 1,235 ft.; set csg.
Mid-Continent Pet. Corp. No. 1 Boren, C NE NE sec. 20-22-36. Drlg. 3,013 ft.
Stanolind O. & G. Co. No. 2 Myers, SW sec. 4-24-37. Drk.
Stanolind O. & G. Co. No. 3 Myers, SE sec. 4-24-37. Cellar and pits.
Gulf Oil Corp. No. 1 Boyd, sec. 23-22-37. R.U.R.
Gulf Oil Corp. No. 2 King, sec. 28-21-37. Drlg. 1,183 ft.
Gulf Oil Corp. No. 1 Shahan, sec. 33-25-37. Wildcat; Drk.
Gulf Oil Corp. No. 1 Woolworth, sec. 30-24-37. Wildcat; drlg. 400 ft.
Repollo Oil Co. No. 2-B Stuart, sec. 10-25-37. Drk.
Maljamar O. & G. Co. No. 3 Mitchell, C SE NE sec. 20-17-32. Location.
Texas Co. No. 1 Fristoe, C SW NW sec. 35-24-37. Drk.
Stanolind O. & G. Co. No. 4 Meyers, sec. 22-24-37. Loc.
Stanolind O. & G. Co. No. 5 Meyers, sec. 22-24-37. Loc.
Magnolia Pet. Co. No. 1 Hanna, sec. 7-26-38. Wildcat; Loc.

Eddy County

Etz Bros. No. 3 State, sec. 16-17-30. T.D. 3,252 ft.; acidized; est. 10 bbls. oil per day; reacidized.
McGinley & Harwell No. 7 Mann, SW cor. sec. 4-18-27. T.D. 2,285 ft.; testing.
Adams et al No. 1 Page, sec. 15-21-18. Wildcat; T.D. 100 ft.; S.D.O.
Republic Prod. Co. No. 7 Russell A, NW SE NW sec. 18-17-31. T.D. 3,283 ft.; repairing motor.
Republic Prod. Co. No. 3 Robinson Permit, C NE NE sec. 27-17-29. Drlg. 2,677 ft.
Barnsdall Oil Co. No. 5 Dodd, sec. 22-17-29. T.D. 2,757 ft.; flowing 75 B.O. daily estimated.
William Dooley No. 2 Hatchett, SW SW NE sec. 14-20-26. T.D. 80 ft.; S.D.
H. & W. Drlg. Co. No. 1 Forgarty, C SW SW sec. 14-23-29. Wildcat; drlg. 1,152 ft.
Flint Prod. Co. No. 1-B Flint, sec. 20-17-30. Drlg. 1,975 ft.
Murchison No. 1-B State, SE sec. 16-17-30. Drlg. 2,060 ft.
Carper Drlg. Co. No. 1 Gissler, NW sec. 23-17-30. Location.
Continental Oil Co. No. 1 Barrett, NW sec. 22-20-30. Loc.
Wesley McCallister No. 1 Cagle, C NW NW sec. 8-26-30. Location.
Repollo Oil Co. No. 1-D Parke, sec. 15-17-30. Loc.
Flynn, Welch, Inc. No. 2 Stevens, sec. 13-17-30. T.D. 240 ft.; S.D. for fuel.
Neil Wills et al No. 1 Stovall-Wood, sec. 20-20-30. Loc.

Roosevelt County

Clovis Corp. No. 2 Wilmes, C SE NE sec. 17-2s-30e. Drlg. 2,881 ft.
Wirt Franklin and Flynn, Welch & Yates No. 1 Catts, C NW NW sec. 28-3n-30e. T.D. 5,195 ft.; to plug back and test.
Dummip Oil Co. No. 1 Todd, SE SE sec. 34-3n-29. Loc.

Otero County

George Muldey No. 1 State, SW cor. sec. 11-25-8e. T.D. 263 ft.; S.D.
O. K. Hearte No. 1 Hattie Evans, NW NW SW sec. 22-24-12. O.W.D.D.; wildcat; T.D. 1,951 ft.; S.D.

COLORADO

Adams County

Glenridge Oil Co. No. 1 Hills, SE SE SE sec. 27-3s-64w. T.D. 4,345 ft.; fshg.

S. W. Pressey No. 1 Ojo, SW NE sec. 10-29s-69w. Drlg. 3,350 ft. after lowering 5⅛-in. to bottom to S.O. cavings caused by gas; Dakota expected 3,900 ft.

Kiowa County

The Gulf Oil Corp. No. 1 Riser-Union Pacific, C SW NE section 1-17s-50, Eads district, which began plugging back to 6,175 feet to abandon several weeks ago, had the tops as follows: Timpas, 950 feet; Dakota series, 1,445 feet; top of Pennsylvania indefinite, but in range between 3,700 and 3,800 feet; Mississippian, 5,383 feet; Viola, 5,591 feet; Arbuckle, 5,701 feet; Sawatch, 6,100 feet; Pre-Cambrian, 6,150 feet; total depth, 6,175 feet. Elevation 4,467 feet.

Larimer County

L. D. Charboneau et al No. 1 Thompson, C NE sec. 12-4n-70w. Drlg. 153 ft.

Lincoln County

Consolidated Smelting & Metals Corp. No. 1 Hancock, NE NE SW sec. 7-17s-52w. T.D. 2,210 ft.; U.R. 8¼-in. for formation S.O.

Moffat County

Mountain Fuel Supply Co. No. 1 Donnell, C SE NE sec. 31-12n-97w. Drlg. 2,344 ft.
Anderson-Kerr Drlg. et al No. 1 Govt., C SE SE sec. 19-9n-99w. T.D. 1,350 ft.; W.O. 12½-in. pipe; 5 ft. snow on ground.

Morgan County

Swisher and associates No. 1 Lunt, in the Orchard district, 10 miles south of the Greasewood pool, is testing a show of oil in sand at 1,620-90 feet. Total depth is 1,718 feet. The hole was drilled with small rotary and water stood on the sand for some time. After running tubing to bottom with packer at 1,600 feet, it swabbed a show of oil with drilling water. Oil has been showing some increase with decrease in water. Hole has swabbed about 50 gallons of green crude, not tested, but estimated at close to 50 gravity. Horizon is not identified, but operator classes it as a stray sand in the upper part of the Pierre. Samples indicate about 90 per cent sand and 10 per cent shale. The top of the Hygiene in the base of the Pierre is encountered at around 3,100 feet in the Greasewood pool 10 miles to the north, and was found at 2,825 feet in the O'Toole well 6 miles to the northeast.

Swisher et al No. 1 Lunt, SE cor. sec. 3-4n-60w. T.D. 1,718 ft.; tstg.

Park County

South Park Oil Co. No. 1 Lemar, Hartsel district, is drilling at 4,180 feet with the 8¼-inch on bottom. It jumped a pin and was down three hours. Upon resuming, oil stood 300 feet in the hole. It has been having some showings in the Pierre shale at 4,070 and 4,160 feet, and during past 10 days has bailed 15 to 20 bbls. per day while drilling. Present showing is believed to be new oil. First objective is the Apache sand at the base of the Pierre, but it is impossible to estimate the depth on account of evident fault thrusting. From present total depth it will be drilled with an underdigger and casing carried as far as possible in an attempt to reach 7,500 feet.

South Park Oil Co. No. 1 Lemar, NE NE SE sec. 34-11s-75. Drlg. 4,180 ft.
South Park Oil Co. No. 1 State, SE NE SW sec. 16-11s-75w. S.D. 5,705 ft.

WYOMING

Albany County

Hal Blakeman No. 1 Chapple, C NE NW sec. 33-21n-76w. C.O. to bottom at 1,681 ft.
Ohio Oil Co. No. 1 Coughlin, SW NE NW sec. 26-16n-77w. Drlg. 403 ft.
Murphy Oil Co. No. 1 Holst-Woolf, NW NW NW sec. 19-17n-76w. Drlg. 1,220 ft.
Murphy Oil Co. No. 3 Wilson, SW NW SW sec. 18-17n-76w. Drlg. 2,387 ft.

Big Horn County

The Stock Oil Co. has a big well in its No. 1-B Allen, Lot 52, section 32-56n-97w, in the Madison lime at a total depth of 4,176 feet. It made 1,700 bbls. in 16 hours on an open flow test after acidizing. It was then choked down and gauged 1,500 bbls. in 24 hours. The 7-inch was cemented on top of the lime at 3,903 feet. This well was drilled as a relief well for the same company's No. 1 Allen, 190 feet to the east, which was out of control for more than a year and on fire several times. The gasser was making 60,000,000 feet a day when it went out of control. The heavy loss of gas, estimated at around 20,000,000,000 feet, evidently had the tendency to draw in the oil from the flanks. The well is located in the southeastern part of the field.

Ohio Oil Co. No. 1 Baker-Byron, SE NW sec. 23-56n-97w. Drlg. 4,183 ft. in sh.

Ohio Oil Co. No. 1 State, NE cor. Lot 38, sec. 36-56n-97. T.D. 5,418 ft.; acidized with 1,000 gals. in Embar-Tensleep; tstg.; only small S.O.

Carbon County

The Ohio Oil Co. No. 7 Harrison & Cooper, C NW section 2-19n-78w, a deep test to the Tensleep in the Rock River field, has been plugged back from 5,671 feet and recompleted in the Lakota at 3,500 feet and saved for a repressuring well. It was located on the south flank, one-fourth of a mile beyond the nearest producer in the Sundance. It found water in that horizon at 3,414-20 feet and was continued on down to the Tensleep, which was topped at 5,591 feet. It had a small show of oil at 5,630 feet, and water. It defines the southern limits of production for both the Sundance and the Tensleep.

The Ohio Oil Co. No. 1 Harrison & Cooper, SE SE SW section 35-20n-78w, an old well deepened from the Dakota, was completed for 25 bbls. per day from the Sundance at 3,225-3,306 feet. Total depth is 3,230 feet. It is an outside well in the Sundance on the southeastern side of the structure. The Ohio company is preparing to deepen its No. 6 Diamond Cattle, on the north side of the field, from the Lakota to the Sundance.

The Ohio Oil Co. No. 1 Union Pacific-Wister, in the Allen Lake district, is an east offset to the Medicine Bow Oil Co. No. 1 Hintze-Government, which extended the proven gas area on that structure a distance of 4 miles when it came in recently for 25,000,000 feet a day in the Upper Sundance.

Ohio Oil Co. No. 6 Diamond Cattle, NW NW sec. 35-20n-78w. R.U. to deepen from 2,932 ft. (first report).
Ohio Oil Co. No. 1 Union Pacific-Wister, C NW SW sec. 17-22n-78w. Loc. (first report).
Medicine Bow Oil Co. No. 1 Hintze-Govt., C NE SE sec. 18-22n-78w. Drlg. 2,080 ft.; will go to R.B.
Ohio Oil Co.-California Co. No. 2 Kyle, C SE SE sec. 26-21n-79w. Drlg. 4,050 ft.
Ohio Oil Co.-California Co. No. 4 Union Pacific, C SW SW sec. 25-21n-79w. Drlg. 2,944 ft.

Converse County

Chadron-Osage Oil Co. No. 1 State, SW cor. sec. 16-32n-69w. Drlg. 3,038 ft.
Wyoming Southern Oil Co. No. 2 Salisbury, NE NW SE sec. 27-32n-69w. Drlg. 225 ft.
Wyoming Southern Oil Co. No. 1 Evert, NW NW SW sec. 26-32n-69w. M.I.M.; contr. to W. P. Holman for 1,000-ft. hole if necessary (first report).

Natrona County

Empire State Oil Co. No. 3-U, SE NE sec. 33-34n-83w. Cmtd. 5⅛-in. at 3,265 ft.; top Embar.
Wyalta Oil Co. No. 4 Govt., NW NW sec. 5-29n-81w. Cmtd. 6⅝-in. on top of Sundance at 1,082 ft.; rng. 2-in. tbg. to test at 1,030-72 ft.
Wyalta Oil Co. No. 5 Govt., SW SW sec. 30-30n-81w. Drlg. 600 ft.
Wyalta Oil Co. No. 6 Govt., NW NW sec. 5-29n-81w. Bldg. road to loc.

Niobrara County

The Continental Oil Co. has an excellent completion in the Lance Creek field in its No. 3-B Schuricht, C SE SE section 6-35n-65w, an inside location in the southwestern part of the field. It was rated at 2,000 bbls. initially through tubing and casing at a total depth of 4,027 feet. It had the basal Sundance at 3,951-4,027 feet and elevation is 4,445 feet. The 7-inch was cemented at 3,925 feet. Actual gauge on fourth day, while well was cleaning itself, was 2,100 bbls.

The Ohio Oil Co. has released a location for an important test on the east side in its No. 1 Leo 17 in section 35. A well was drilled to the Dakota a number of years ago at this location. It proved to be just outside and was abandoned. The new location is half a mile east of the same company's No. 5 Leo, a drilling well, and a mile east of the nearest Sundance producer.

Ohio Oil Co. No. 1 Leo 17, NW NW SE sec. 35-36n-65w. Rng. dk. (first report).
Ohio Oil Co. No. 6 Putnam, C NW NW sec. 4-35n-65w. T.D. 4,019 ft. R.U. to deepen.
Ohio Oil Co. No. 8 Putnam, SW SE SW sec. 33-36n-65w. Drlg. 1,573 ft.
MacKinnie Oil & Drlg. Co. No. 2 Thompson, NW NW NE sec. 7-35n-65w. M.I.M.
J. M. Huber Corp. No. 1 Midwest, SE SE SW sec. 27-36n-65w. T.D. 3,540 ft.; fshg.
Riggs Oil Co. No. 2 Spaugh, SE SE SW sec. 32-34n-65w. Drlg. 1,348 ft.
Ohio Oil Co. No. 5 Leo, NW NW SW sec. 35-36n-65w. Drlg. 4,268 ft.

Park County

General Pet. Corp. No. 1 Govt., NW NW NW sec. 33-47-100. Cg. 5,780 ft.

Platte County

Dividend O. & R. Co., Inc., No. 1, CSL NW SW sec. 17-24n-66. S.D. 2,385 ft.; C.D.

Uinta County

Two locations were released in Uinta County, one of which is to be a 5,000-foot test. Last named is the

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Beacon Dome Oil Co. No. 1 Union Pacific, C SE section 29-14n-118w, on the Meridian Anticline. It is 3½ miles south of a test drilled to 5,092 feet in 1933 by the E. L. Doheny interest. It had a good show of gas at 4,067-4,101 feet. Ed Preston, of Signal Hill, California, is head of the Beacon Dome company.

Beacon Dome Oil Co. No. 1 Union Pacific, C SE sec. 29-14n-118w. Loc. (first report).

E. A. Ottman et al No. 1 Govt., C SE NW sec. 26-14n-119w. M.I.M. for cable tool test to Bear River form. at 1,600 ft. (first report).

Washakie County

Arlton & Doyle No. 1 Govt., SW SW SE sec. 29-48n-91w. T.D. 1,356 ft.; prep. to resume.

Weston County

Carl Kundy No. 3 Govt., CSL NW NW sec. 32-46n-63w. M.I.M. (first report).

MONTANA

Big Horn County

Big Horn O. & G. Co. No. 1, NW SW SE sec. 14-1s-33e. Drlg. 700 ft.

Hardin General Hospital No. 1, CNL NE SW sec. 23-1s-33e. Drlg. 670 ft.

Carbon County

Miracle Oil Co. No. 2 Govt., CWL NE SE sec. 3-6s-23e. T.D. 1,260 ft.; landed 8¼-in. at 1,250 ft.; fsg.

Fallon County

Montana-Dakota Utilities Co. No. 3 Smith No. 1, Unit 8. C SE NW sec. 8-4n-62e. T.D. 6,811 ft.; will test before D.D.; not commercial at 6,750-65 ft.

Glacier County

The Cut Bank field in Glacier County is getting back into its stride with three completions and four new locations.

The Glacier Production Co. No. 1 Abraham, C SW SE section 19-34n-5w, swabbed 50 bbls. first 22 hours at a total depth of 2,776 feet. The Cut Bank sand was at 2,722-75 feet and Sunburst at 2,675-2,720 feet. The 7-inch was cemented at 2,716 feet.

The Glacier Production Co. No. 5 Seeba, CWL NW NW section 2-34n-6w, swabbed 186 bbls. first 24 hours at 2,933 feet from the Cut Bank at 2,855-2,932 feet. The 7-inch was cemented at 2,870 feet.

R. C. Tarrant No. 1 Kirst, C NW SW section 18-34n-5w, made between 1,000,000 and 2,000,000 feet of gas per day initial with a spray of oil at 2,767 feet. The 7-inch was cemented at 2,717 feet. There was a show of gas in the Sunburst at 2,717-35 feet. The Cut Bank was at 2,740-65 feet.

Glacier Prod. Co. No. 2 Fuller, C NW SE sec. 17-33n-5w. Loc.

Glacier Prod. Co. No. 2 Connolly, C SW SW sec. 6-33n-5w. Loc.

Glacier Prod. Co. No. 1 Corrigeau, NW NW NW sec. 21-33n-5w. R.O.G.

C. E. Walgren No. 2 Britton, C SE NE sec. 14-34n-6w. R.U.

Texas Co. No. 1 Stufft, C NW NW Lot 4, sec. 1-35n-6w. Drlg. 756 ft.; 10¾-in. at 346 ft.

Santa Rita O. & G. Co. No. 1 Madison, CWL NW SW sec. 30-34n-5w. Spdg.

Kately, Drumheller-Ward No. 5, C Lot 4, SE SE sec. 10-34n-6w. Drlg. 2,790 ft.

Wm. Hanlon, Agt., No. 2 All.-128, C NW SE sec. 12-32n-6w. Drlg. 1,700 ft.

Dakota-Montana Oil Co. No. 1 Tribal-136, C NE NE sec. 15-34n-6w. Drlg. 990 ft.

Wm. Hanlon, Agt., No. 2 All.-131, C Lot 9, SW NW sec. 7-32n-5w. Drlg. 2,300 ft.

Dr. Peter Potter No. 2 All.-125, NW NE NE sec. 12-32n-6w. Drlg. 2,010 ft.

Judith Basin County

Fletcher E. Hunt No. 3, NW SE NE sec. 30-14n-15e. Drlg. 1,333 ft.

Petroleum County

O. B. Canfield No. 1 Govt., CEL SE NE sec. 21-17n-24e. Drlg. 770 ft.

H. C. Rowland No. 1 Kalispel, NE NE SE sec. 35-14n-25e. Drlg. 781 ft.

Pondera County

Gordon Campbell No. 1 Hughes, NW NE NW sec. 12-30n-4w. T.D. 2,494 ft.; fshg.

Toole County

There was one completion in the Kevin-Sunburst field in W. S. McKnight's No. 1 Gunderson, SW SE NW section 9-35n-2w, at a total depth of 1,595 feet in the lime. Pays were at 1,572 and 1,589 feet. It is waiting on acid and will make a small well.

Pfabe & Engleking No. 11 Seabrook, CSL SE SE sec. 19-35n-2w. Loc.

A. E. Crumley No. 9 Fryberger, CEL NW SE sec. 24-35n-3w. Loc.

W. S. Knight No. 1 Gunderson, SW SE NW sec. 9-35n-2w. Drlg. 1,000 ft.

A. E. Crumley No. 11-A Shaw, SE NW NE sec. 35-36n-2w. Drlg. 260 ft.

A. Beardslee No. 5 Swears, CSL SE NW sec. 9-35n-2w. Drlg. 1,210 ft.

Yellowstone County

R. C. Tarrant No. 1 Kelly, SE SE NW section 26-3s-24e, on the Mosser dome, was completed in the Dakota at 1,007-17 feet for an initial production of 70 bbls. per day. It is a west offset to his No. 2 Mosser, which was completed for approximately the same quantity of oil. This gives Tarrant three producers in the Dakota on this small dome.

Broadview Dome Oil Co. No. 1, NE NE SW sec. 18-3n-23e. Unloading tools.

R. C. Tarrant No. 2 Sayre, NE NE SW sec. 26-3s-24e. M.I.M.

UTAH

Emery County

Standard Oil Co. of California and Continental Oil Co. No. 1-A Palm, C NW NW sec. 27-23s-11e. T.D. 1,652 ft.; prep. to resume.

Grand County

Utah Southern Oil Co. No. 1 Hyde, SE NW NW sec. 33-22s-22e. Drlg. 6,571 ft.

Columbia Crude Corp. No. 1 Rath, NW SW SE sec. 12-25s-20e. T.D. 2,045 ft.; cmtd. 7-in. at 2,132 ft.; drlg. plug.

NEBRASKA

Sioux County

J. M. Huber Corp. and United Producers, Inc., No. 1 Morgan, C SW SW sec. 32-35n-56w. Drlg. 2,725 ft.

Dawes County

Stephens Oil Corp. No. 1 Palmer, C NW SW sec. 1-33n-50w. Drlg. 1,838 ft.

Lincoln County

Smith & Wright No. 1 Hansen, C SW NW sec. 24-15n-31w. Drlg. below 1,200 ft., gr. sh.; strong O.&G. shows last 400 ft. in either Greenhorn or Carlisle; samples sent to Lincoln for correlation.

Arch Perry, superintendent of Carter Oil Co.'s gasoline plant in the Fitts pool, Oklahoma; H. B. Milam, general superintendent of gas lines, Cities Service Co.; Harry McDaniel, superintendent of pipe line construction, Cities Service Co., on the right of way of the 48-mile gas line being laid from the Carter gasoline plant in the Fitts pool to the Cities Service system at Seminole

California Field Report

By
L. P. STOCKMAN

WILMINGTON FIELD COMING FAST; EL SEGUNDO SPOTTY

LOS ANGELES, Calif., Apr. 5.—Crude oil production in California exceeded the 600,000-bbl. mark a few days ago for the first time since February 12, 1936, and will undoubtedly reach a much higher figure within the next 10 days if operators conform with their usual procedure of overproducing during the first half of the month and restricting production late in the period.

No difficulty is expected from a production angle during April, but the Central Committee may be obliged to increase the state's crude oil quota in May due to the completion of new wells in the Wilmington and El Segundo fields and the resumption of production activities in the Santa Maria Valley field, where wells have been shut in immediately subsequent to completion. Union Oil Co. should put its Santa Maria pipe line in operation within a month and thus the Santa Maria Valley field will become a factor in the state's production. In addition to these three fields, additional production will be developed in the Rosecrans field of Los Angeles Basin as a result of drilling operations by Barnsdall, Union Oil Co. and other operators holding potentially productive acreage. Barnsdall, with several upper zone producers susceptible of being deepened to the zone which this company recently discovered in No. 10 O'Dea, is rigging up rotary drilling equipment in No. 12 O'Dea preparatory to drilling ahead to the new O'Dea horizon. Union Oil Co. has started rig construction for No. 6 Rosecrans, which will offset No. 10 O'Dea to the west. In addition to this work already actually under way, we may anticipate the drilling of several more wells by other operators in the near future. Republic Petroleum Co. has quitclaimed and surrendered to the lessors all but 2½ acres of the Trust lease in the Rosecrans field and this property was subsequently optioned by the Universal Consolidated Oil Co.

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	March 25		March 18			
Intercoastal-domestic:	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Diesel and gas oil	.....	.....	.....	.....	176,726	151,541
Gasoline	.....	.....	79,760	11,394	286,012	1,219,973
Kerosene	.....	.....	.....	.....	.....	385,956
Foreign exports:						
Crude oil	425,671	60,810	372,486	53,212	2,868,004	2,140,391
Fuel oil	378,525	54,075	188,064	26,866	3,042,953	2,272,119
Diesel and gas oil	47,609	6,801	153,750	21,964	1,605,770	980,099
Gasoline	299,040	42,720	291,891	41,699	1,705,482	1,395,115
Kerosene	45,699	6,528	.....	.....	633,806	136,080
Other unfinished oil	.....	.....	22,734	3,248	179,265	6,439
Coastwise-domestic:						
Crude oil	266,386	38,055	64,512	9,216	1,434,215	1,326,412
Fuel oil	169,260	24,180	351,679	50,240	3,373,600	2,251,430
Diesel and gas oil	15,760	2,251	6,261	894	528,019	392,136
Gasoline	381,078	54,440	193,823	27,689	2,713,852	2,998,042
Kerosene	3,703	529	.....	.....	31,998	67,318

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic:						
Diesel and gas oil	.....	.....	.....	.....	152,932	.....
Gasoline	.....	.....	.....	.....	25,778	.....
Lubricants	.....	.....	.....	.....	.....	7,608
Foreign exports:						
Crude oil	.....	.....	148,423	21,203	829,591	628,908
Fuel oil	32,396	4,628	69,705	9,958	356,977	951,255
Diesel and gas oil	143,597	20,514	47,272	6,753	810,173	131,912
Gasoline	66,647	9,521	13,115	1,874	1,328,396	717,192
Kerosene	69,027	9,861	.....	.....	234,386	163,707
Lubricants	11,846	1,692	10,320	1,474	163,157	73,788
Coastwise-domestic:						
Fuel oil	99,081	14,154	107,913	15,416	1,557,272	1,735,501
Diesel and gas oil	.....	.....	14,008	2,001	122,031	118,596
Gasoline	91,177	13,025	148,663	21,238	1,167,983	1,023,790
Kerosene	.....	.....	.....	.....	21,509	40,000

Wilmington

Five new wells were completed in the Wilmington field of Los Angeles Basin and as many more are scheduled for completion during the forthcoming seven-day period. Gilmore Oil Co. completed No. 842-1, flowing 540 bbls. of clean 17.4 gravity oil from 3,590 feet. It was finished with an 8⅝-inch combination string, cemented through perforations at 3,048 feet. The lower 540 feet of the string was perforated. George F. Getty, Inc., with three strings of tools in operation, completed No. 3 Wilmington, flowing 539 bbls. of relatively clean 17.4 gravity oil daily from 3,575 feet. Brain, Cooper & Haney completed No. 1 Mouche, after plugging back from 3,645 feet to 3,590 feet. It flowed 340 bbls. of 17.4 gravity oil daily. Bankline Oil Co. completed No. 1 Classification yards and started preparations to spud in No. 13 D.H.C. and No. 12 P.T.C. The company's new well pumped 131 bbls. of 17.6 gravity oil initially from 3,547 feet after the hole had been finished with a 6⅝-inch liner including 302 feet of perforated. Royalty Service Corp. completed No. 2 Community early in the week, pumping 192 bbls. of 17.2 gravity oil per day from 3,685 feet, plugged back from 3,758 feet. This company is ready to spud No. 1 Buckley, and Nos. 3 and 4 on the Community lease. The Union Pacific Railroad Co. is running five strings of tools and is either driving piles, building rigs or rigging up for 15 other wells. This company holds acreage on three sides of the Ford Motor Co.'s property, which is being developed by General Petroleum, and is obliged to drill offsets around the three sides, and offset wells on the Terminal and Interstate leases as well as protecting its acreage from drainage by wells completed in the subdivided area which parallels the western edge of its property. General Petroleum Corp. has five drilling wells on the Ford lease, is rigging up another and has two additional locations staked.

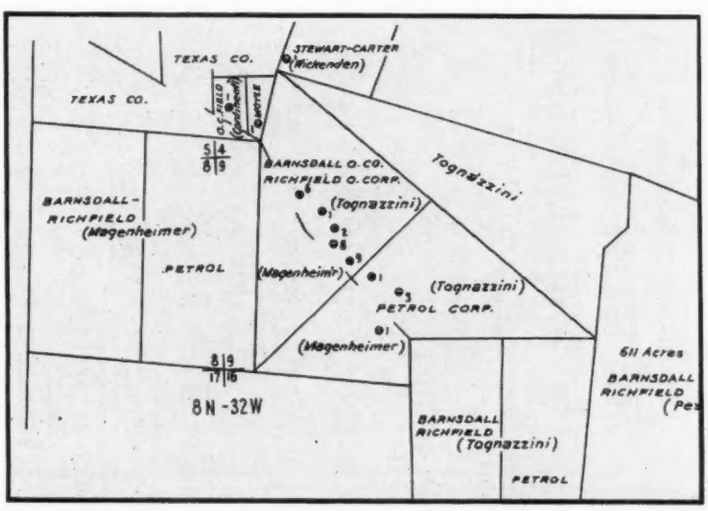
El Segundo

The El Segundo field of Los Angeles Basin has proved unusually spotty as far as production is concerned and the effect exerted by faulting has not been clearly determined. No. 1 Security of the Texas Co., the most westerly well in the field, still heads the production list, as it is flowing 4,384 bbls. of clean 26.7 gravity oil per day. Richfield Oil Corp. No. 1 El Segundo, the first large completion, is flowing 1,130 bbls. of clean 27.3 gravity oil daily. Union Oil Co. No. 1 Security, the most southerly completion, is flowing 1,036 bbls. daily but shows a water cut varying between 8 and 20 per cent. It is generally believed the cement job became defective. Union Oil Co. has established a remarkable drilling record in drilling No. 2 El Segundo, which is located west of No. 1 in the southern part of the field. In seven days the company made 3,300 feet of hole, including the time out while cement was setting in the surface pipe.

In contrast with the several large wells in the El Segundo field, Royalty Service Corp. No. 1 Buffington is good for only 100 bbls. per day from 7,389 feet. This new well was brought in flowing approximately 500 bbls. per day but suddenly turned to gas and then back to oil. Current production, however, is only approximately 100 bbls. per day. The Caminol Co. No. 1 El Segundo was another small well completed in this field within the past week as it was good for only 75 bbls. of 26.7 gravity oil daily from 7,367 feet. Neither of the Caminol Co.'s two completions in the El Segundo field would flow, and both were brought in on compressors. Republic Petroleum Co., discoverer of the El Segundo field, completed No. 4 El Segundo, flowing 520 bbls. initially from 7,429 feet, and has landed a string of 7-inch casing in No. 5 El Segundo preparatory to a production test. No. 4 El Segundo is showing an increasing tendency and may make a much larger flow within another few days. Richfield Oil Corp. has passed the 2,000-foot level in No. 1 Santa Fe and spudded in No. 5 El Segundo a few days ago. The Texas Co., in addition to starting rig construction for No. 2 Security, is preparing to resume work on No. 2-1 Johnson in the extreme eastern part of the field. This well tested wet on a recent test at 7,756 feet and the hole was accordingly plugged back to 7,715 feet.

Midway-Sunset

The Midway-Sunset field yielded five new wells in the past week. Standard Oil Co. has rigs going up for three wells. The company completed No. 39-23-D, pumping 235 bbls. of oil and 4 bbls. of water per day from 3,365 feet. This well, in section 23-32-24, encountered bottom water at 3,708 feet, but it was plugged off. Standard's next completions should be No. 7-33-D and No. 123-33-D in section 33-32-24. The Texas Co. No. 19 Midway, in section 32-32-24, was completed pumping 285 bbls. of clean 22.6 gravity oil per day from 2,890 feet. It was finished with an 8⅝-inch water string landed at 2,740 feet and 174 feet of 6⅝-inch liner, including 147 feet of 80-mesh screen. Rig for No. 20 Midway has been completed and drilling equipment will be moved in shortly. The Tide Water Associated Oil Co. No. 31, in section 35-31-22, was completed, pumping



The Gato Ridge field of Santa Barbara County, discovered by Barnsdall Oil Co. in 1931, will be further developed during the current year

41 bbls. of 14.2 gravity oil initially from 1,329 feet. Honolulu Oil Corp. completed No. 36 in section 14-32-24 and should have No. 46 ready for a production test soon. No. 36 pumped 134 bbls. of clean 23.6 gravity oil daily from 3,570 feet. It was finished with a 4¾-inch liner cemented through perforations at 3,503 feet and which carried 31 feet of 120-mesh screen. Richfield Oil Corp. No. 8-A Fellows, in section 6-23-23, has been completed pumping 90 bbls. of 14.4 gravity oil daily from 1,309 feet.

McKittrick

Union Oil Co. recently purchased the deep sand rights on the Welport Oil Co. 280-acre lease in the McKittrick field of Kern County in section 26-29-21. This acquisition was made for protective purposes as there is no intention to engage in deep zone exploration soon. Peters Royalty Corp. completed No. 2 McKittrick in section 32-29-22, pumping 35 bbls. of 12.8 gravity oil per day from 1,696 feet.

Kern River

In the Premier section of the Kern River field, Tide Water Associated Oil Co. completed No. 3 in section 4-28-27 after plugging back from 2,811 feet to 2,735 feet. It pumped 50 bbls. of 14.5 gravity oil showing a rather high water cut. The 6⅝-inch water string, landed and cemented at 2,746 feet, was perforated at 2,647-64 feet and at 2,693-2,714 feet after the hole had been plugged back to the completion depth. The M. H. Whittier Co. completed No. 4 Cauley in section 16-28-27, pumping 160 bbls. of 14.7 gravity oil initially from 2,815 feet. It was finished with a 6⅝-inch liner including 68 feet of 140-mesh screen. California Star Oil Co. No. 9-40 Robinson, in section 22-28-27, has been completed pumping 137 bbls. of 15.2 gravity oil per day after the hole had been plugged back from 2,699 feet to 2,647 feet and finished with an 8⅝-inch liner carrying 343 feet of perforated.

Fruitvale

In the Fruitvale field of Kern County, Western Gulf Oil Co., discoverer of the Fruitvale field, completed No. 2 West flowing 674 bbls. of 22.5 gravity oil daily from 3,952 feet, but water broke in subsequent to completion and will necessitate some further work. The Magnet Oil Co. No. 4 Anderson, another new completion in the Fruitvale field during the week, also showed an excessive amount of water, which may be due to edgewater encroachment. It was brought in pumping 146 bbls. of 22.9 gravity oil cutting 18 per cent water from 4,190 feet after the hole had been plugged back from 4,245 feet. The Seahawk Petroleum Co. No. 1-C, in section 23-29-27, was brought in pumping 224 bbls. of clean 21.6 gravity oil per day from 3,214 feet. The Pal-Pen Oil Co. has abandoned No. 1 Barbara as a duster at 3,152 feet but is skidding the rig to a new locaton in the same section.

San Miguelito

Continental Oil Co. completed an excellent well in the San Miguelito field of Ventura County although subsequent drilling may prove that this well is in reality located in the Ventura Avenue field instead of San Miguelito. Continental's new producer was No. 6 Grubb, which flowed 1,610 bbls. of 23.9 gravity oil per day from 6,800 feet. This is the third large completion on the Grubb lease adjacent to the Shell's holdings in the extreme western end of the Ventura Avenue field and since the first three wells on the Grubb lease differ from Nos. 4, 5 and 6 it is logical to believe that the latter group is located on the Ventura Avenue structure. Continental Oil Co. has a new rig up for No. 7 Grubb which will be one location east of No. 6 and thus closer to Shell's productive acreage at Ventura Avenue. Shell Oil Co. completed a well on the Taylor lease in the Ventura Avenue field flowing 2,670 bbls. of clean 27.4 gravity oil and 2,500,000 feet of gas per day from the deep zone at 8,090 feet.

Kern County

In the Mountain View field of Kern County Ohio Oil Co. completed No. 1-B Derby in section 33-30-29 flowing 820 bbls. of clean 25.8 gravity oil per day from 5,165 feet, plugged back from 5,910 feet. In the Round Mountain field Honolulu Oil Corp. completed No. 65 in section 18-28-29 pumping 208 bbls. of 17.8 gravity oil daily from 1,840 feet after the hole had been finished with a 6⅝-inch liner carrying 84 feet of 130-mesh screen. This company has spudded in No. 25 in this same section and is building rigs for Nos. 87 and 24.

Ventura County

In the Shiells Canyon district of Ventura County, the Texas Co. completed No. 132 Shiells, doing 118 bbls. of 25.6 gravity oil per day on a compressor from 3,123 feet. Honolulu Oil Corp. has apparently extended the productive limits of the South Mountain field of Ventura County. No. 1 Hobson in section 23-3-21 was brought in pumping 40 bbls. of 23.3 gravity oil per day from 6,744 feet. Production is showing a rather high water cut. Up in the Elwood field of Santa Barbara County Barnsdall and Rio Grande Oil Co. recompleted No. 19 Luton Bell doing 160 bbls. per day from 3,685 feet after the hole had been plugged back from 3,728 feet.

Greeley—Ten Section

Shell Oil Co. killed its discovery well in the Ten Section field of Kern County preparatory to deepening to the black oil zone, immediately below the gas cap from which it has been producing. This well was brought in producing approximately 2,500 bbls. of clean 61.3 gravity oil per day and subsequent wells produced a normal black crude oil averaging around 35 degrees, A.P.I. By casing off the gas cap and making a little additional hole the discovery well can be transformed into a normal producer. Signal Oil & Gas Co. has reached the 8,000-foot level in No. 1 Kern County Land in section 21-30-27, but has not yet encountered the expected pay. Superior Oil Co. resumed drilling operations in No. 8 Kern County Land, an outpost in the Ten Section field which has been standing cemented at 10,380 feet for the past 60 days.

Gas Fields

Amerada Petroleum Corp. completed No. 1 Mayhood in the Rio Vista gas field of Solano County but it was shut in following completion at 4,532 feet without making a production test. Previous completions in this field have averaged approximately 40,000,000 feet per day from the same horizon. This is the sixth commercial gas well in the Rio Vista gas field since its discovery by Amerada Petroleum Corp. Five of these have been completed by Amerada and one by Standard Oil Co. The former's No. 2 Drouin in section 25-4-2, which is drilling ahead at 3,500 feet, should be the next well finished. In the Buena Vista Lake gas field, Ohio Oil Co. has just landed a combination liner following completion of drilling operations on No. 4-A Kern County Land which has been deepened to 5,276 feet and should consequently be ready to give this potential gas producer an early test. In the McDonald Island gas field of San Joaquin County Standard Oil Co. has just spudded in No. 3 McDonald Island but it should be another 30 days before this well will be ready for a production test.

Los Angeles Basin

In the Richfield district of Los Angeles Basin Union Oil Co. completed two wells on the Chapman lease and may have No. 8 Coyle on production within another 10 days. No. 44 Chapman was completed pumping 267 bbls. of 19.9 gravity oil per day from 3,465 feet and No. 45 Chapman was finished pumping 173 bbls. of similar grade oil daily from 3,469 feet. In the Huntington Beach field Richrow Oil Co. completed No. 1-A Severns doing 391 bbls. of 22.8 gravity oil per day on a compressor from 5,235 feet. In the Torrance field of Los Angeles Basin Franz Nelson has completed his No. 2 Redondo pumping 120 bbls. per day from 3,526 feet and unlike other completions in this field the production is relatively clean. Standard Oil Co. is making plans to drill a new well in the Seal Beach field in the near future and Tide Water Associated Oil Co. also has a new rig up. This will be the first drilling in this field by either for a long time.

STOCKS HELD IN PACIFIC COAST TERRITORY BY CALIFORNIA OIL COMPANIES

	January 31, 1937	December 31, 1936	Jan. changes	Jan. 31, 1936
1. Nongasoline-bearing crude residuum, gas and diesel oils..	71,465,041	74,445,997	—2,980,956	70,055,178
2. Gasoline-bearing crude	33,363,124	33,770,339	— 407,215	40,642,706
3. Unblended natural gasoline	1,990,607	1,828,636	+ 161,971	1,750,613
4. Gasoline (not including distributing and service stations)	13,297,082	12,384,540	+ 912,542	11,580,629
5. Naphtha distillates	a1,176,618	a1,387,940	— 211,322	a1,916,722
6. All other stocks	b7,011,626	b7,526,284	— 514,658	b9,297,868
Total	128,304,098	131,343,736	—3,039,638	135,243,716
a Estimated amount of unfinished gasoline contained in item No. 5	1,001,614	1,133,326	.....	1,507,921
b Coke included in item No. 6	190,467	246,292	.....	448,211

STANDARD OIL CO. OF CALIFORNIA AND UNION OIL CO.

Crude oil prices at the well effective June 22, 1936

Gravity—	Signal Hill (Long Beach)	Seal Beach	Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda-Brea Canyon	Athens-Rosecrans	Dominguez	Elwood Terrace	Torrance	Richfield	Whittier E. Coyote (La Habra)	Montebello	W. Coyote Hills	Santa Fe Springs	Mountain View	Elk Hills Buena Vista Hills Midway-Sunset Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills	Santa Paula*	Orcutt*
14-14.9	$ 80	$ 79	$ 74	$ 78	$ 79	$ 80	$ 76				$ 80	$ 76	$ 76	$ 77	$ 78			$ 70	$ 70	$ 70			$ 70	
15-15.9	80	79	74	78	79	80	76				80	76	76	77	78			70	70	70			70	
16-16.9	80	79	74	78	79	80	76				80	76	76	77	78			70	70	70			70	$ 70
17-17.9	80	79	74	78	81	80	76				80	76	76	77	78			70	70	70			71	70
18-18.9	80	79	74	78	84	80	78				82	76	76	77	78			70	70	70			73	72
19-19.9	82	79	74	82	87	84	81				85	76	78	77	78		$ 70	74	74	71	$ 70		75	74
20-20.9	85	79	74	85	90	88	84				88	78	82	77	80		70	78	78	72	70		77	77
21-21.9	88	79	74	89	93	93	88				91	80	85	77	84	$ 78	73	82	82	74	70		79	80
22-22.9	92	82	74	92	96	98	92				93	84	89	79	88	78	77	87	86	78	72		82	83
23-23.9	95	86	77	96	99	1 02	96	$ 84	$ 79		96	88	93	82	92	78	80	92	90	82	76		85	86
24-24.9	99	91	80	1 00	1 02	1 06	99	88	81		99	91	96	85	96	82	84	97	94	86	79		87	88
25-25.9	1 03	95	82	1 03	1 05	1 11	1 03	93	83		1 02	95		89	99	86	88	1 01	98	90	83		90	91
26-26.9	1 06	1 00	85	1 07	1 09	1 16	1 06	98	86		1 05	98		92	1 03	90	91	1 06	1 02				92	93
27-27.9	1 10	1 05	88	1 14	1 12		1 10	1 03	88			1 02		96	1 06	95	95	1 10	1 06				95	
28-28.9	1 14	1 10	90	1 14	1 15		1 14	1 07	90			1 06		99	1 10	99	99	1 15	1 10				97	
29-29.9	1 17	1 15	93	1 18	1 18	F.O.B.	1 17	1 12	93			1 09		1 03	1 14	1 03	1 02	1 20	1 14				99	
30-30.9	1 21	1 19	95	1 22	1 21	our	1 21	1 17	95	F.O.B.				1 07	1 17	1 08	1 06	1 25	1 18				1 01	
31-31.9					1 24	Pipe	1 24	1 22	97	Ship				1 11	1 21	1 12	1 09	1 29						
32-32.9					1 27	Line	1 27	1 27	1 00					1 14	1 25	1 16	1 13	1 34						
33-33.9								1 32		$1 28				1 18	1 28	1 20	1 17	1 38				$1 19		
34-34.9								1 37		1 32				1 22	1 32	1 25	1 20					1 23		
35-35.9								1 42		1 35				1 25		1 29						1 27		
36-36.9								1 46		1 39				1 29		1 33						1 31		
37-37.9								1 51		1 43				1 32		1 37						1 35		
38-38.9								1 56						1 36		1 42						1 39		
39-39.9								1 61						1 40								1 43		
40-40.9								1 66						1 43										

Newhall, McKittrick, Kern River, Kern Front and Round Mountain, 70 cents for all grades. *Posted by Union Oil Co. Same company's Brea Canyon schedule stops at $1.14 for 28 degrees and over, and Belridge and Lost Hills schedule stops at $1.32 for 37 degrees and over.

HOCKLEY IS LATEST PERMIAN BASIN COUNTY TO SHOW OIL

By L. E. BREDBERG

FORT WORTH, Tex., Apr. 5.—Hockley County was added to the producing list of West Texas counties in the past week.

During the past year and a half four of the northernmost West Texas counties saw the opening of production, Gaines, Cochran, Dawson and Yoakum making up this quartet. The southeastern Cochran County discovery led to the drilling of this new Hockley County strike, which is about 11 miles east by south of the Cochran discovery.

The Texas Co. receives credit for opening the latest field in the district. The discovery well is on the large Slaughter ranch, in the southwest corner of Labour 83, League 38, Zavalla County School Lands, near the center of a block of some 7,000 acres, which is flanked by tracts held by the Honolulu Oil Corp., one of the co-discoverers of the Yoakum and Cochran counties strikes; the Texas Pacific Coal & Oil Co., Mid-Continent Petroleum Corp., and Gulf Oil Corp. Other companies will now rush in to purchase what acreage they can find nearest to the well. They will not be able to get very close because of the large block held by Texas Co.

The first oil picked up in the discovery was logged at 4,968-73 feet, with increases in oil and gas from 4,980 feet to the present total depth of 5,022 feet. It flowed an estimated 100 bbls. of oil into pits in six and one-half hours and was shut in to await storage tanks. Gravity of the oil tested 30.6 according to one report and 31.9 according to another. After tanks are set and connected a production test will be made and if the well does not show as large a potential as desired it may be carried deeper and then shot or acidized, as was the discovery to the west in southeastern Cochran County.

New Wildcats

P. N. Wiggins of Dallas, Harry Lawson of Tyler, and others have staked location for an interesting wildcat approximately 4 miles northwest of the Cochran discovery well on the Duggan ranch, in the southeastern corner of Cochran County. The location is near the center of Labour 26, League 92, Lipscomb County School Lands, on the C. Slaughter ranch.

Two wildcat tests are slated for immediate drilling, one of which is located only about 2¼ miles southwest of the Landreth Production-Kirk discovery well, the first oil producer in Gaines County. Ralph H. Gill of San Angelo will drill this test on the P. W. Dalmont ranch, in the SE quarter of section 5, Block A-22, P.S.L. Survey. The other test for Gaines County will be in the southwest corner. T. N. Sloan and W. M. Blevins, both of Midland, have staked location in the NE cor. section 19, Block A-28, P.S.L. Survey, near the Andrews County line and about 5 miles north of failure drilled to 4,800 feet.

The Sun Oil Co. has farmed out leases in an area about 5 miles southwest of the Taylor-Link pool, Pecos County, to the Dobbs Oil Co., which has already staked location for a wildcat in section 20, Block 18, University Lands. Cannon & Cannon of San Angelo will drill a wildcat 7 miles west of the same field, in section 2, Block 20, University Lands.

On the eastern side of the district two tests are drilling or preparing to get under way in Runnels County. E. R. Price and A. R. Kramer of Burlington, Iowa, and John Castor of Ballinger are rigging up standard tools in Block 227, Hughes Survey, southeast of Ballinger, for a 5,000-foot well. M. B. Stephenson has spudded in his test 2 miles east of the city on the W. J. Fowler farm. It is in section 150, E.T.R.R. Survey.

In Mitchell County a wildcat location was staked by the Mitchell Oil & Gas Co. on the Z. Morrison ranch, in section 36, Block 29, Township 1n, T.&P. Survey, west of the Westbrook field, the first producing field in West Texas, in Mitchell County.

Goldsmith Extensions

The Goldsmith field in Ector County is scheduled for a couple of extensions which will expand the field at least another 1¼ miles, three-quarters of which will be on the north end, and a half mile in the southeast corner of the field. The Phillips Petroleum Co. and Pure Oil Co. No. 9 C. Cowden, located in section 12, Block 44, Township 1s, T.&P. Survey, is showing for a producer at 4,152 feet, where it was swabbing through tubing to test the oil showing logged at 4,135 feet. On the south end, the same company's No. 2 Cowden, in section 26, Block 44, Township 1s, T.&P. Survey, was also showing for a well. Total depth is 4,018 feet and pipe has been run and cemented preparatory to testing.

More Outlet for Goldsmith

The Goldsmith field is due for its second major pipe line outlet in the near future the Shell Pipe Line preparing to lay 50 miles of 6-inch line from its Barnsley station in the Sand Hills or Tubbs area in western Crane County north to this new field in Ector. The Gulf Pipe Line Co. is the only company having an outlet from the field at the present time, Goldsmith is assuming proportions that make it appear as one of the largest pools ever uncovered in West Texas. The field is proven for about 11 miles from north to south and as yet is undefined in any direction.

Wildcat in Ward

The Fullerton Oil Co. of Los Angeles is scheduled to sink a test on a block of 6,440 acres out of the John Sealey Estate, lying east of the O'Brien field in northern Ward County, and is planning on drilling in section 82, Block A, G.M.M.B.&A. Survey. This test will seek the pay found in the Tubbs well 20 miles to the southeast in Crane County.

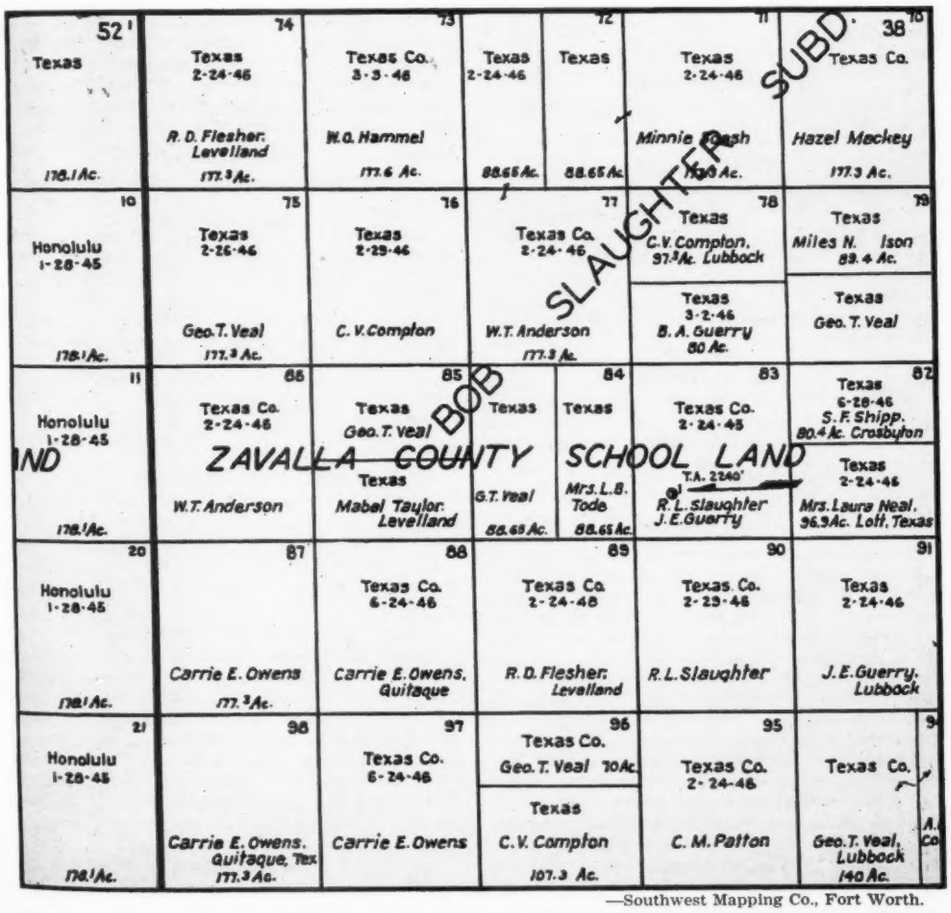
Menard Wildcat

H. C. Grafa of San Angelo, and associates, are to drill a shallow wildcat in the eastern part of Menard County, about 7 miles east of Menard, the county seat, and a short distance northwest of tests drilled in 1927, which logged good oil showings. Location is in the A. Mohr Survey No. 74, on the Miss Dora N. Kothmann ranch on a block of 2,200 acres.

Eighty locations were staked in the West Texas district in the past week. Fifty-four wells were completed all producing except two, which were abandoned.

Field Outlet

The Mason field in western Loving County now has a pipe line outlet. A short line has been completed by the Mason Oil Co., tying into the Pasotex Pipe Line Co.'s (Standard Oil Co. of Texas) 8-inch carrier from



—Southwest Mapping Co., Fort Worth.

The Texas Co. has a good showing of oil in its No. 1 Slaughter and Guerry, on Zavalla County school lands in Hockley County, West Texas. It is first oil found in the county. Hockley is the fifth county added to the Permian Basin oil region in the past 18 months

Winkler County to El Paso. That company will take production from the field at present.

WEST CENTRAL AND NORTH TEXAS

Five miles northeast of Abilene the Golden Petroleum Co. of San Angelo, has staked location for a 2,400-foot wildcat on the H. O. Wooten lands, in section 4, Blind Asylum Lands. It is near the center of a 1,700-acre block assembled by W. R. Apperman and Cross D. Payton and geologized by Carl S. Shoults of Abilene. This location is about 4 miles north and west of Dunn & McAllister No. 1 Bowles, which is showing for a small discovery well in Taylor County, at total depth of 1,751 feet.

Potential Discovery

Roeser & Pendleton, Inc., No. 1 G. R. Davis, in the southeast quarter of section 1, Block 13, T.&P. Survey, a wildcat located about 3½ miles southeast of the nearest production and 12 miles west of Albany, in Shackelford County, was bottomed at 1,594 feet this week making 4,000,000 feet of gas from a sand tentatively identified as the Flippen. Pipe was run preparatory to testing and deepening if necessary. It may prove the addition of another producing area to the county which is one of the most active in the state, from a drilling standpoint.

Reagan and Davis of Duncan, Okla., have staked location for a 3,000-foot wildcat test on the B. H. Williams farm, 2½ miles east of Denton in Denton County and the Chandler Drilling Co. of Gainesville is now rigging up. Another test for the area will be that of Sparks & Russell on the Bundy tract in the P. P. Cady Survey. This test is to go only to 2,100 feet and will be drilled by cable tools.

Another Jack Wildcat

Another Jack County wildcat will be that drilled by F. S. Freeland and others on the Graves ranch in the Seth H. Hazel Survey, 12 miles north of the town of Bryson. It is on a block of 3,600 acres and is to be carried to 3,600 feet.

The Selby Oil & Gas Co. has assembled a block about 3 miles southeast of Forrestburg in Montague County, and have made location for a 3,500-foot rotary hole on the J. M. Batts farm, in the M. B. Tatus Survey. Loffands Brothers have the contract.

Another test for Denton County will be that of George J. Greer and others on the T. M. Ross lands in the J. C. P. Melton Survey northwest of Crump and southeast of Sanger. It too, is contracted to go only to 2,100 feet looking for oil or gas in the horizon found in the Sanger gasser recently discovered by the Bolivar Oil & Refining Co.

Second Deep Producer

The deeper lime pay formation which recently yielded a good well in the old Rock Crossing pool in Wilbarger County for Phillips Petroleum Co., has been proven this week as a substantial new horizon which may yield many millions of barrels of oil and prove itself one of the best pays of the 10 uncovered in the field. The Humble Oil & Refining Co. is now completing an even better well than the Phillips' discovery. This second deep test, a northeast offset to the discovery, and located in the southwest corner of section 46, Block 4, H.&T.C. Survey, topped the deep lime pay at 3,067 feet and was bottomed at 3,076 feet to run casing and tubing preparatory to making a potential test. Five other tests in the field are now being deepened to the new pay which is no doubt the Landreth lime. Many old wells can be expected to be deepened and new tests drilled to this pay in the field.

PANHANDLE DISTRICT

In the Panhandle district A. H. Flaherty of Midland has taken a block of 15,000 acres in the northeast part of Swisher County, in extreme wildcat territory, the block carrying a drilling obligation.

The Axtell Oil Co. has started drilling an outpost test in section 32, Block M-21, T.C.R.R. Survey, Hutchinson County, about 3 miles east of a production in the Dolomite pay area. The company is completing the nearest producer to the test on the east edge of the producing area.

Wildcat Strike

Empire Oil & Refining Co. No. 1 J. Stephens, located in the southwest quarter of section 187, Block B-2, H.&G.N. Survey, in the west central part of Gray County, is appearing as a new wildcat granite-wash discovery for this county, or a 2-mile northeastern extension to production. It logged oil at 3,106-08 feet and at 3,145-61 feet and shut down at the latter depth to erect storage preparatory to making a production test. The nearest test, 2 miles to the southwest made 10,000,000 feet of gas with only a 20-bbl. daily oil spray in December, 1929. Later it was deepened into salt water then plugged back to make a small oil well.

WEST TEXAS COMPLETIONS

Andrews County

Fuhrman Petroleum Co. No. 4-B Boner, 4,285-4,485 feet, 532 bbls. R. H. Henderson and others No. 1 J. E. Parker, 4,190-4,556 feet, shot, 10 bbls. per day on pump. Humble Oil & Refining Co. No. 17 J. S. Means, 4,500-30 feet, acidized, 789 bbls. Shell Petroleum Corp. No. 1 E. F. King, 4,421-86 feet, 325 bbls. on pump.

Crane County

Clark and others No. 1 Jordan, 3,558-3,750 feet, shot and acidized, 90 bbls. on pump. Gulf Oil Corp. No. 25 Crier-McElroy, 2,815-3,004 feet, shot, 240 bbls.; No. 147 McElroy, 2,788-2,975 feet, shot, 359 bbls. Humble Oil & Refining Co. No. 8 Tubbs, 4,305-4,420 feet, acidized, 1,030 bbls. W.E. Production Co. No. 1-B Durham, 2,484-95 feet, shot, 120 bbls.

Crockett County

John I. Moore No. 1 Hoober, dry and abandoned, 2,523 feet, elevation 2,605 feet.

Ector County

Landreth Production Co. No. 1-E Scharbauer, 4,155-4,270 feet, acidized, 392 bbls. Sinclair Prairie Oil Co. No. 1 Glass, 4,170-4,293 feet, shot, 555 bbls.; No. 3 Smith, 4,097-4,253 feet, 459 bbls. Standard Oil & Gas Co. No. 39 Cowden 4,070-4,295 feet, shot, 854 bbls.; No. 41 Cowden, 4,028-4,265 feet, shot, 767 bbls. Texas Pacific Coal & Oil Co. No. 2 C. Scharbauer, 4,205-67 feet, acidized and shot, 1,434 bbls. York & Harper No. 2 Foster, 4,100-4,223 feet, shot, 509 bbls.

Glasscock County

John I. Moore No. 2 McDowell, 2,417-35 feet, plugged back to 2,430 feet, acidized, 848 bbls.

Howard County

Plymouth Oil Co. No. 12 Kloh, 2,410-2,543 feet, acidized, 1,393 bbls. Sinclair Prairie Oil Co. No. 47 Dodge, 2,565-2,785 feet, shot, 405 bbls.

Loving County

Willie & Lockhausen No. 1 Wheat, 4,200-20 feet, shot, 220 bbls.

Pecos County

Cardinal Oil Co. No. 46-E Tippett, 420-24 feet, 23 bbls.; No. 48-E Tippett, 470-79 feet, 23 bbls. on pump. E. P. Cravens No. 1 University, dry and abandoned, 1,664 feet, elevation 2,554 feet. Ohio Oil Co. No. 54-A Yates, 1,353-1,545 feet, 4,188 bbls. in one hour. Pecos-Onondaga Oil Co. No. 1 Fromme, 1,567 feet, plugged back to 1,558 feet, total depth, 27 bbls. oil and 60 bbls. water on pump.

Upton County

Arnold Oil Co. No. 2 Harrell, 1,990-2,169 feet, acidized, 979 bbls. F. W. Merrick, Inc., No. 3 Cordova-Union 2,072-2,136 feet, acidized and shot, plugged back to 2,136 feet, 98 bbls. Powell Gap Oil Co. No. 3 Lane 2,161-71 feet, acidized, 830 bbls.

Ward County

Jess Gibson and others No. 3 Owen-Sloan, 2,175-2,339 feet, shot, 196 bbls. Grisham-Hunter, Inc., No. 4 Himmel, 2,275-2,383 feet, shot, 194 bbls. Gulf Oil Corp. No. 14 Estes, 2,501-2,940 feet, 640 bbls. Pat Hill No. 11 Clements, 2,225-2,308 feet, shot, 329 bbls. Humble Oil & Refining Co. No. 10-F University, 2,460-2,760 feet, 1,256 bbls.; No. 11-F University, 2,674-2,742 feet, shot, 823 bbls. Richardson Oils, Inc., No. 21 Hathaway, 2,498-2,629 feet, shot, 3,080 bbls. Standard Oil Co. of Texas No. 4-37 McFarland, 2,500-2,650 feet, shot, 1,685 bbls.; No. 28 York, 2,350-2,525 feet, shot, 183 bbls. through one-fourth inch tubing. Tide Water Associated No. 13 Johnson, 2,472-2,667 feet, shot, 8,216 bbls.; No. 15 Johnson, 2,476-2,690 feet, shot, 4,147 bbls.

Winkler County

Harry Adams and others No. 8-A Walton, 2,787-2,846 feet, 839 bbls. Amon G. Carter No. 5 Walton, 3,275-3,353 feet, shot, 473 bbls.; Emperor Oil Co. No. 3 Hess, 3,040-80 feet, 3,424 bbls. Gulf Oil Corp. No. 25 Daugherty, 2,815-3,120 feet, shot, 723 bbls.; No. 28 Daugherty, 2,801-3,128 feet, shot, 1,242 bbls. Humble Oil & Refining Co. No. 14-A Colby, 2,805-3,010 feet, shot, 149 bbls. Magnolia Petroleum Co. No. 65 Walton, 2,825-2,970 feet, shot, 779 bbls.; No. 66 Walton, 2,800-2,977 feet, shot, 1,109 bbls. J. R. Sharp No. 1 Walton, 3,305-3,414 feet, shot, 159 bbls. Sinclair Prairie Oil Co. No. 15-C Walton, 2,793-2,976 feet, shot, 1,291 bbls. Siosi Oil Co. No. 8 Lovett, 2,760-3,123 feet, shot, 518 bbls. Texas Pacific Coal & Oil Co. No. 2 Clapp, 2,760-3,125 feet, shot, 682 bbls.; No. 19 Daugherty, 2,800-2,947 feet, shot, 707 bbls.; No. 1 Nan-Tex, 2,760-3,125 feet, shot, 470 bbls.

CENTRAL TEXAS COMPLETIONS

Callahan County

Canyon Oil & Gas Co. No. 1 Kidd, 4 miles northwest of Cross Plains, 815 feet, dry and abandoned. Mesa Verda Oil Co. No. 2 Klepper, 2,024 feet, dry and abandoned.

Jones County

Danciger & Fortex No. 5 Dorsey, total depth 2,255 feet, dry and abandoned.

Palo Pinto County

Palo Pinto Oil & Gas Corp. No. 18 Strawn Coal, 3,010-35 feet, 3,500,000 feet gas.

Shackelford County

Humble Oil & Refining Co. No. 1 Bowman, total depth 1,575 feet, dry and abandoned. Groover, Rose, Jones & Stasney No. 1 Davis, 1,637 feet, dry and abandoned. S. B. Owen and others No. 9 Morris, 1,594-1,610 feet, 120 bbls. Roeser & Pendleton No. 22 Dawson & Conway, 1,602-25 feet, 150 bbls. Ungren & Frazier No. 1 McCowan, northwest corner of county, 1,925-32 feet, treated with 2,000 gallons acid, 30 bbls. oil, 40 bbls. water.

Wise County

Texas-Canadian Oil Co. No. 1 Maxwell, northeast corner of county, total depth 4,040 feet, dry and abandoned.

NORTH TEXAS COMPLETIONS

Archer County

Consolidated Oil Co. No. 1 Abercrombie, 1,545 feet, dry; No. 16 W. H. Portwood, 1,447 feet, dry. Golding & Cochran No. 9 B. R. Jeske, 1,186-90 feet, 200 bbls. Hamilton Petroleum Co. No. 1 Prideaux, 860 feet, dry. W. T. Hutcheson, Jr., No. 1 Birdwell, 1,475 feet, dry. Petroleum Production Co. No. 1 J. H. Turbeville D, 2,862 feet, dry.

Clay County

Bridwell Oil Co. No. 6 Saner, 257-70 feet, 15 bbls.

Cooke County

Dove Oil Co. No. 5 J. A. Carr, 1,930-50 feet, 100 bbls.; No. 6 J. A. Carr, 1,921-30 feet, 45 bbls. Mudge Oil Co. No. 18 Alice Johnson, 1,150-1,192 feet, 50 bbls. Pace Petroleum Co. No. 6 R. E. Aldridge, 1,151-88 feet, 42 bbls. Schermerhorn Oil Co. No. 10 F. J. Hess, 742-95 feet, 15 bbls. Vindicator Oil Co. No. 11 J. Walterscheid, 760-95 feet, 12 bbls.

Denton County

Mullen & Weil, Inc., No. 1 Mrs. D. G. Taylor, 2,514 feet, dry.

Jack County

Beard & Collier No. 1 R. R. Clayton, 2,942-70 feet, 495 bbls.; No. 2 Clayton, 2,953-71 feet, 525 bbls. L. T. Burns No. 1 M. N. Garrett, 803 feet, dry. Cato Oil Co. No. 3 J. A. Raley B, 2,970-75 feet, 455 bbls. Hammond Petroleum Co. No. 2 J. S. Rhodes, 2,354-66 feet, 470 bbls.

Montague County

Tom B. Medders No. 2 Jackson, 711 feet, dry. Bridwell Oil Co. No. 4 Honaker, 1,004-83 feet, 5 bbls. G. W. Cooper No. 17 Waggoner C, 1,630-50 feet, 350 bbls. Culbertson Co. No. 82 Waggoner Brothers, 1,521 feet, dry. A. R. Douglas No. 1 L. P. Douglas, 341 feet, dry. E. B. Madden No. 13 fee, 545-50 feet, 5 bbls. Pois & Schulz No. 4 Foster A, 1,255-70 feet, 110 bbls. George Proctor No. 6 Foster, 841-50 feet, 10 bbls. Target Drilling Co. No. 1 Foster, 2,120 feet, dry.

Wise County

Texas Canadian Development Co. No. 1 Maxwell, 4,040 feet, dry.

Young County

R. B. Farris No. 1 G. H. Sanford, 666 feet, dry. Owen-

wood & Willis No. 1 Stewart, 1,647 feet, dry. Rathke Oil Co. No. 13 Graham, 906-10 feet, 25 bbls.; No. 2 Johnson Estate, 4,226-44 feet, 35 bbls. O. L. Swanson No. 14 W. F. Bailey, 632 feet, dry.

Louisiana-Arkansas Fields

(Continued from Page 80)

one-fourth inch tubing choke, casing pressure 2,525 pounds, tubing pressure 2,175 pounds, gas-distillate ratio 1,200 to 1, total depth 8,231 feet.

On tentative test, United's No. 2 Davis, NW section 23-21-10, at Cotton Valley, yielded 400 bbls. of distillate daily with a gas ratio of 12,000 to 1, tubing pressure 3,475 pounds, casing pressure 3,400 pounds, total depth 8,551 feet. This well is now standing for orders, pending decision as to how ratio can be reduced.

ARKANSAS
Ashley County

Joe Modisette is moving in materials for the drilling of No. 1 Stillions Lumber Co., center S half SW NW section 18-17-9, on an extensive block originally mapped by seismograph by Phillips Petroleum Co. Modisette was given a portion of the block for drilling the test. Location is 18 miles due north of the Monroe, La., gas field.

Miller County

After purchasing a substantial interest in C. V. Lenz' block surrounding his recent discovery 18 miles due east of Texarkana, E. H. Moore, Inc., of Tulsa staked two nearby locations last week in section 24-15-26, which promise to immediately indicate more completely the potentialities of the Texarkana field.

The important wildcat test about 7 miles south of Texarkana, Odell Hinson and others No. 1 Montana Realty Co., section 3-17-28, has resumed operations in fishing for stuck drill stem at 2,000 feet. Total depth is 5,325 feet, and attractive showings were reported 5,276-78 feet prior to the fishing job, which has caused a three-month shut down.

Nevada County

The deep Travis Peak test in the recently discovered Troy field of Nevada County yielded only salt water in upper sand members of that formation, and Benedum & Trees have plugged and abandoned No. 1 Block, NE NE SE section 9-14-20.

The same operators completed No. 8 Grove, SW SW NW section 10-14-20, pumping 118 bbls. oil and 150 bbls. salt water, from the Tokio formation at Troy, total depth 2,173 feet.

Union County

Arkansas oil men anxiously await the testing of Lion Oil Refining Co. No. 1 Morgan, section 18-18-17, near Shulter in Union County after 9⅝-inch casing has been set at 5,555 feet, total depth 5,559 feet. Prior to setting casing, drill stem test from 5,544-59 feet showed a hole full of oil in 15 minutes, with 85 pounds pressure through one-fourth inch choke and five-eighths inch bottom choke, estimated 250,000 feet of gas, 41.2 gravity crude. Operators have announced intention to drill cement plug first of this week, and informed men confidently expect a new oil field will be opened in south Arkansas.

EAST TEXAS (Border Counties)
Cass County

Materials are being moved in for the immediate drilling of the McAllister Fuel Oil Co. and others No. 1 J. J. Doorley, Callaway Davis Survey, Cass County, Texas, situated about 6 miles northwest of Douglassville. This is proposed as a 6,500-foot test on highly regarded 6,400-acre block about 35 miles east of the Talco field on a northeastern extension of the Balcones fault system. The Blossom, Woodbine, Paluxy and Lower Glen Rose horizons are to be tested to the contract depth of 6,500 feet, and possibly the test will be carried deeper if commercial production is not found above. The area has been thoroughly mapped by seismograph, and such majors as Humble, Pure, Magnolia, Texas, and H. L. Hunt are prominent holders of acreage nearby.

Shelby County

Some delay has been encountered in testing attractive oil and gas showings logged in H. A. Stebbinger and others No. 2 Pickering, A. Hanson Survey, after fishing job developed while drilling out casing cement plug. Operators are now fishing for drill pipe.

It is reported that H. A. Stebbinger and associates have purchased a half interest in the Redditt & Gray No. 1 Pickering, Stephen English Survey of Shelby County, which has been shut down for several months at 2,150 feet. Fuel line is now being laid to the test, and operations are to be resumed shortly.

MISSISSIPPI
Lamar County

As a third test drilled to define the limits of the first salt dome recently discovered in Lamar County, Mississippi, Sun Oil Co. and others have staked location and are rigging up No. 2 Talley, NW NE NW section 33-4n-15w. The first test here gave definite indications of the salt dome, and the second test was drilled in search of production on its flank, but encountered the same salt at 2,000 feet and was abandoned at 2,015 feet. The No. 2 Talley will have the flank production as its objective.

Hinds County

The State of Mississippi's 5,500-foot test in search of oil in the Jackson gas field may be plugged. The matter is now before the Mississippi State Mineral Lease Commission for decision. This commission consists of the governor, the attorney general, land commissioner, supervisor of the State Oil and Gas Board and the state geologist. This deep test, No. 2 fee, section 25-6n-1e, is now at a depth of 5,455 feet and fishing for reamer bearings. It is reported that Governor Hugh L. White wants to see this well drilled to 7,500 feet if possible; contract depth is 5,500 feet.

Seismographing and Leasing

Geophysical work continues active in the Mississippi Delta area and south. Phillips' torsion balance crew is working in Township 1 north, 11 west, Perry County. The seismograph crews of Sun Oil Co. are working in Lamar County just southwest of Sumrall. The Hoard Exploration Co. is working in northern part of Wilkinson County, reportedly for Danciger and associates. The California company's seismograph is working 7 miles west of Brookhaven, Lincoln County. The Continental Oil Co. has a gravimeter outfit working between Brookhaven and Magnolia, Mississippi, Lincoln and Pike counties.

Many majors are now returning land men to Mississippi, and increased interest and activity is quite noticeable. Cleve Love, well known Arkansas and Louisiana operator, has assembled a 15,000-acre block in George and Green counties, Mississippi, located in Township 1 north, Ranges 7 and 8 west, where a wildcat test is anticipated.

Kirby Petroleum Co. has now about 8,000 acres near Magnolia, Miss., and derrick has been erected for test. The Humble and Sun companies both have acreage in this block.

C. M. Dorchester of the Gulf recently closed deal for some 20,000 acres in lower Perry County.

The Texas Co. has returned land men to Mississippi where they are assembling leases in lower Perry, George and Stone counties. The Sun Co. is also active here.

The Magnolia Petroleum Co. has opened land offices in New Orleans for the purpose of entering the Mississippi "play."

FLORIDA

The Gulf Oil Corp. of Texas has obtained leases covering about 1,000,000 acres in Lee, Henry and Collier counties, Florida, and has agreed to spend $8,000 monthly for two years in a search for oil or gas by scientific methods. Clem S. Clark, well-known Shreveport oil man, has become affiliated with the Gulf company and will supervise oil and gas exploration work throughout this area for them.

Gulf Coast Fields

(Continued from Page 84)

at 8,066-92 feet and is bottomed at 8,098 feet with 7-inch casing cemented on bottom. This test offsets Diadem Oil Co. No. 1 Way, believed to have opened a separate field from the Dickinson field proper. Offsetting No. 1 Way, Pure Oil Co. No. 1 Sealy Hutchings has the appearance of making a wet gasser after perforating the casing at 8,058-61 feet. It is flowing through an eighth-inch choke, showing 2,400 pounds on the tubing and 2,700 pounds on the casing. In the Dickinson field proper, Humble Oil & Refining Co. No. 1-C Bayou Development Co. flowed 580 bbls. per day through a quarter-inch choke from a total depth of 8,038 feet while Pure Oil Co. No. 1-B Sheloer flowed 322 bbls. per day through a quarter-inch choke from a depth of 8,108 feet. In the south extension area, Humble Oil & Refining Co. No. 16-A Maco Stewart flowed 38 bbls. per hour through a quarter-inch choke from a total depth of 8,850 feet.

South Louisiana

The discovery of a salt dome in St. Martin Parish and the possibility of a new sand being found at the Valentine field in Lafourche Parish were the most interesting developments in the Louisiana Gulf Coast district the past week.

Texas Co. No. 9 St. Martin Land, located on the Henderson or Plum Bob Prospect, St. Martin Parish, topped salt at 8,848 feet and is shutdown in salt at 8,885 feet. The well is located in section 21-8s-7e and is the fourth deep test to be drilled on the structure, three of which had favorable showings of oil. The dome is located north of the St. Martinsville field in the northern part of the parish.

Two new producing sands were apparently uncovered by Pan American Production Co.'s operations at the Valentine field in Lafourche Parish as preparations were being made for a test. No. 3 Harang, 660 feet southwest of the discovery well, topped oil sand at 7,489 feet and a test was scheduled to be made after coring sand at 7,521 feet. The top of this sand was encountered approximately 600 feet deeper than the discovery well which is producing from sand topped at 6,895 feet and bottomed at 6,950 feet. No. 2-A Harang cored sand showing oil from 5,364-90 feet and 7-inch casing was being cemented for a production test. No. 4 Harang was bottomed in the same sand at a depth of 5,396 feet and a drill stem test was being made.

North of the Houma gas field in Terrebonne Parish, Humble Oil & Refining Co. No. 1 H. J. Ellender in section 23-19s-19e is drilling in shale below 11,384 feet making it the third test to be drilled below the 11,000-foot level. Several showings have been indicated on an electrical logging device and unless a deeper sand is found, these will be tested by perforations. The other deep test was drilled by Stanolind Oil & Gas Co. and the Continental Oil Co. which passed the 12,000-foot level.

William Helis No. 1 City of New Orleans located on the Marchian Salt dome, Lafourche Parish, was running an electrical logging device to 7,333 feet after coring sand showing oil. This well proved this structure a salt dome several weeks ago when it topped the salt at 7,463 feet and after drilling to a depth of 8,012 feet, the hole was plugged back and sidetracked. Location is in section 19-23s-23e.

At the South Roanoke Prospect, Jefferson Davis Parish, Shell Petroleum Corp. No. 1 Joe Sturdivant in section 25-10s-4w, was plugged back from a depth of 9,749 feet to 8,600 feet and on an 8-minute drill stem test, through perforated casing at 8,590-70 feet, it showed 225 pounds of pressure and flowed salt water. The perforations have been sealed off and the hole plugged back to 8,500 feet where another test will be made. In the same parish, but on the East Hayes Prospect, Stanolind Oil & Gas Co. No. 1 United Life and Accident Insurance Co. was drilling in shale below 7,900 feet and is being watched with interest.

Lafitte Extension

An 1,800-foot east extension to the Lafitte field in Jefferson Parish was assured by Texas Co. No. 6 Lafitte as it is coring in sand showing oil at 9,638 feet. This is the "highest" well drilled on the structure to date indicating that all completed wells have been drilled down dip from the high point of the structure which should result in the field being extended twice its present size. Twelve wells have been completed, ranging in depths from 9,300 feet to 10,000 feet and the producing limits are still undefined. The field is over two years old and has not produced a barrel of salt water, although the daily withdrawal has been rather large.

Additional drilling activity was assured the old Jennings field in Acadia Parish as a result of the showing of A. G. Glassell and others No. 1 J. Trushel, located on the west flank of the field.

In the Big Lake field, Cameron Parish, Union Sulphur Co. No. 1 J. O. Hebert was running an electrical logging device to 7,040 feet after sand and sandy shale with an odor of oil and gas was cored. The 19-foot section reported last week at 6,815 feet failed to show favorable in an electrical survey and was passed up without making a drill stem test. Location is in section 18-12s-8w.

Central West

Operations in Central Ohio, Kentucky, Illinois, Indiana

By GEORGE A. WHITNEY

FINDLAY, Ohio, Apr. 5.—Pure Oil Co. has posted a price of $1.26 per barrel for the oil being produced in its two wells in Clay and Wayne counties, Illinois, and made the price retroactive to March 1. The two wells are said to be producing about 140 bbls. a day. The oil is run through a pipe line to a loading rack on the Baltimore & Ohio Railroad and shipped to refinery by tankcar.

The future of oil development in Fulton County, northwestern Ohio, was given a setback in the past week when the N. L. Stevens second test on the Enos Roth farm, a few miles north of Wauseon, in section 13, German Township, was abandoned as a failure. This test was drilled through the Trenton sand at 2,255-2,205 feet, where it made a small show of both oil and gas. Local operators were of the opinion that a new field had been opened a few months ago, when two tests drilled by Stevens resulted in fair producers. The failure of this latest test, a short distance from one of the earlier wells, has put a damper on activity and the majority of operators are abandoning plans for further development in the area. N. L. Stevens has contracted to drill one more test to the Trenton in Fulton County and this well will probably be drilled in the near future.

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OHIO FIELD

In Fairfield County, section 4, Pleasant Township, City Natural Gas Works No. 5 Marion Watson was drilled through the Clinton sand and abandoned as dry. In section 5 the same company is rigged up for No. 3 Ella Tschopp farm and in section 33, Berne Township, is spudding on the John Stuckey lease.

Ohio Fuel Gas Co. No. 1 Dora Lones, in section 31, Hopewell Township, Perry County, was abandoned at 2,975 feet. It made a show of oil and gas. In section 2, Monroe Township, Wehrle Brothers No. 7 Worley Deaver was drilled through the Berea sand at 1,195-1,230 feet and gauged 330,000 feet of gas after a shot.

In Vinton County, section 4, Brown Township, Vung & McCartney are preparing to drill Celina Cornish property.

Leathers & Co. have started drilling two new tests in Huron County, one on the J. Bellamy farm in section 4, Hartland Township, and the other on the Edwin Burr property, in section 3.

In Lorain County, Lot 79, Columbia Township, Snyder & Wiles completed the test on the Mary Walker farm as a 409,000-foot gas well in Clinton sand at 2,658-72 feet. In Lot 57, same township, the Kemrow Co. is moving a rig onto the M. J. Osborn property. In section 12, Avon Township, William Dempsey No. 1 Cornelius Moore was completed below the Clinton sand at 2,365-74 feet and gauged 558,000 feet of gas naturally. The same operator is rigged up for a test on the Joseph Miller farm, in section 10.

In Medina County, Lot 62, Medina Township, Harry Latshaw No. 2 Harry Aylard failed to find the sand and was abandoned.

Brendal Producing Co. test on the Clark Stark lease, in section 3, Jackson Township, Stark County, was completed as a 2,826,000-foot gas well in Clinton sand at 4,304-28 feet. In section 18, same township, East Ohio Gas Co. staked a location on the Mary Killinger property. In section 16, Plain Township, Pfieffer & Co. No. 2, A. V. Pontius gauged 524,000 feet of gas after a shot in Clinton sand at 4,568-4,603 feet.

East Ohio Gas Co. is moving a rig on the Albert Wise property to deepen from the Newburg to the Clinton sand. The well is in section 19, Green Township, Summit County.

In section 3, Hopewell Township, Muskingum County, Allen Willie & Co. are rigged up on the Caldwell & Currie properties. In section 32, Wayne Township, Mid-East Gas Co. No. 1 Charles Sines was drilled to 4,315 feet and gauged 585,000 feet of gas after a shot of 50 quarts. It had a rock pressure of 1,190 pounds.

Frank Lyons test on the Ross Patterson & Co. property, in section 10, Franklin Township, Harrison County, gauged 205,000 feet of gas naturally in the Clinton sand at 5,597-5,607 feet and will be shot.

In Tuscarawas County, section 4, Mill Township, Walton & Co. No. 2 Buckeye Fire Clay Co. topped the Berea sand at 1,050 feet, made a small show of gas at 1,057 feet, water at 1,097 feet, and was plugged and abandoned when the hole filled with water at 1,115 feet. In section 4, Coshen Township, James Upham is moving a rig onto the Charles Leggett property.

Preston Oil Co. has staked a location for No. 2 Ernest Mallet in section 9, Franklin Township, Monroe County. In section 25, Summit Township, Local Co. No. 4 A. and M. Faber made a small show of gas in the Lime sand at 1,363-80 feet, but made no oil or gas in the Keener sand at 1,440-55 feet and has been plugged and abandoned. In section 24, Perry Township, Charles Hogue is spudding on the W. S. Howell (Jesse Yost) property.

Hayes Ferguson & Co. No. 2 Ray Wilson, in section 12, Cambridge Township, Guernsey County, was drilled through Berea sand at 1,114-74 feet, with a show of oil from 1,122-30 feet and three bailers of water at 1,149 feet and will be plugged and abandoned. In section 9, Millwood Township, Ohio Fuel Gas Co. No. 1 Evalene Hall, was completed as a small gas well in the same sand at 1,592-1,601 feet.

In Noble County, section 25, Marion Township, George Robinson & Co. are rigged up on No. 2 W. S. Atkinson.

In Morgan County, section 1, Homer Township, Choguill & Co. No. 24 Onie Linscott, which made 40,000 feet of gas naturally in the second Berea sand at 1,383-94 feet, was shot with 20 quarts and the volume was increased to 80,000 feet.

Swingle & Co. No. 32 Clarence Palmer, in Location 1,077, Palmer Township, Washington County, was completed below the first Cow Run sand at 560-75 feet and produced 2 bbls. the first 24 hours after a shot. In Location 1,072, same township, Russell & Co. are moving in rig for No. 26 Joseph Lorentz. In section 32, Warren Township, Anderson & Co. are fishing at 1,065 feet in No. 4 Jacob Vickers. In the same county, section 34, Ludlow Township, Beardmore Gas Co. No. 6 Bertha Winland gauged 168,000 feet of gas in the Injun sand at 1,305 feet and will be drilled deeper. In section 30, Aurelius Township, Wickens & Aikens have rigged up No. 23 on the Joseph Wickens property.

In Meigs County, section 3, Rutland Township, Smith Oil Co. completed the second test on the Jasper Miller property as a 890,000-foot gas well in the Salt sand at 636-86 feet. It had a rock pressure of 235 pounds. In section 11, Lehart Township, C. W. Hoback & Co. No. 1 E. W. Higginbotham was drilled through the first Berea sand at 1,917-30 feet. It found a large quantity of water and will probably be abandoned.

ILLINOIS FIELD

No completions were reported in the Illinois field this past week but operations are still increasing in that section. In Clark County, NE SW SE section 33-11n-14w, Parker Township, Joseph Hasset is rigged up for No. 31 on the J. A. Turner property. In the SW quarter of section 17-11n-14w, same township, Morris Yeager No. 1 Fenton and True Booth has been shut down at 470 feet.

Goodwin, Cooley & Co. are spudding on the Lewis Valbert property in section 6-5n-14w, Sainte Marie Township, Jasper County. In Hunt Township, section 18-7n-14w, William Goodwin's test on the M. M. Burton farm is temporarily shut down at 1,104 feet.

In Washington County, SW SE NW section 22-1s-4w, Okawville Township, Patton & Co. are rigged up on the Morgan and Baldwin property.

In McDonough County, NE NW SW section 16-4n-4w, Lamoine Township, Spence & Co. are drilling below 200 feet in No. 5 on the Joseph Hoing property.

Howard Forrester No. 1, on his own property, in the SW NW section 5-6s-1w, Duquoin Township, Perry County, is drilling below 4,719 feet.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, April 3.—On the west flank of South Turner Valley, Royalite Oil Co. No. 4 Sterling-Pacific, LSD 4, section 33-18-2w5, finished in the Madison lime at 7,184 feet, is definitely the largest producer in the field. The initial production test showed 1,074 bbls. in 24 hours, which later increased to 1,204 bbls. Settled production appears to be slightly larger than B.&B. Co. No. 1, up to that time the largest producer. Gravity has increased from 42.5 to 43.1 Be.

The well, offsetting Turner Valley Royalties No. 1 about a quarter mile to the north got the Madison lime 338 feet lower at 6,734 feet, and was drilled approximately 450 feet to the black lime horizon. The gas-lift was used to clear the hole of rotary fluid, the gas, forced down through 3-inch tubing, blowing out 5,000 feet of mud in a few hours, after which green crude rose rapidly in the casing. Mud was run off through a flare line. Later tests indicated close to 1,300 bbls. a day. This is the sixth crude producer completed on the west flank making an aggregate initial crude production of around 4,000 bbls.

In section 21-18-2w5, Foundation Royalties No. 1, LSD 5, with initial production rated around 245 bbls., has increased its flow about 23 bbls. a day.

Dalhousie Deep Test

In the West-Central area, Dalhousie Oil Co. No. 8, LSD 6, section 30-19-2w5, is below 6,911 feet after getting the Madison at 6,178 feet, and preparing to test production as soon as the black lime is reached. This test has an unusual thickness of porous lime above the black lime horizon, which is normally encountered about 450 feet in the Madison.

Location is in previously untested territory and about 5½ miles north of the nearest crude producer and 1½ miles west of the line of crude oil production. The structure trend is, however, northwest. The nearest producer is Dalhousie No. 7, about a half mile to the northeast, which got a small naphtha production in the Madison.

West Central Area

In the West Central area, Brown Oil Corp. No. 3 has tentative location in LSD 15, section 19-19-2w5, but may shift to LSD 10, depending on results from Dalhousie No. 8, in the section immediately north.

In section 5-19-2w5, Mercury Royalties No. 1, LSD 8, is resuming after running 13-inch casing to 2,505 feet. North American Petroleums No. 1, LSD 10, same section, has gas and water lines laid and is working on derrick.

West Flank Drilling

On the west flank of South Turner Valley Richland Royalties No. 3, LSD 14, is below 4,800 feet.

Southwest Extension

In the southwest extension of Turner Valley, Prairie Royalties No. 1, LSD 16, section 17-18-2w5, is below 1,200 feet. In section 16-18-2w5, Brown Oil Corp. No. 1, LSD 14, is spudding. Richwell Oil Co. No. 1, LSD 5, same section, is rigging, and will spud early in April.

In the far south, National Petroleum Corp. No. 2, LSD 14, section 9-18-2w5, is spudding with standard tools.

North Turner Valley

On the west flank of North Turner Valley, Phillips Royalties No. 1, LSD 16, section 16-20-3w5, is running 13-inch casing preparatory to resuming from 2,370 feet.

High River-Aldersyde

In the High River area, east of Turner Valley, Arca Development Corp. No. 1 has resumed from 8,924 feet after cementing casing in the limestone. On the Aldersyde structure, Ranchmen's Gas & Oil Co. No. 1, LSD 16, section 13-20-29w4, is below 7,082 feet.

Detailed figures issued by the Alberta government show that in February the Royalite Oil Co. was the major producing unit in Turner Valley, with 44,412 bbls. The new B. & B. Co. No. 1 producer ranked second with 30,878 bbls., representing 25 days' production. Turner Valley Royalties No. 1 was third with 17,738 bbls. and the Mercury-Miracle group fourth with 9,270 bbls. Among the new crude producers, Foundation Royalties No. 1 yielded 2,291 bbls. and Royalite No. 3 Sterling Pacific 2,789 bbls. Sovereign Royalties No. 1 naphtha well yielded 1,651 bbls.

Calgary & Edmonton Development

An agreement has been completed between Royalite Oil Co., subsidiary of Imperial Oil, Ltd., and the Calgary & Edmonton Corp., of Winnipeg, which calls for the drilling of a series of wells on the corporation's holdings in Turner Valley. The first well under this agreement is Royalite No. 5 Sterling-Pacific in LSD 12, section 33-18-2w5. In recent months the Calgary & Edmonton Corp. has granted leases or options to other companies on approximately 9,000 acres on the west flank, with obligations to drill this spring and summer and 16 locations have been definitely made, with several wells already drilling. The Calgary & Edmonton Corp. is jointly interested with Imperial Oil, Ltd., and the Canadian Western Natural Gas Co. in the Arca Development Corp. deep test on the Cayley structure east of Turner Valley.

Tests in the Foothills

In the Forest Reserve area west of Olds, Hunter Valley Oil Co. No. 1 McLaren, LSD 12, section 13-34-10w5 is in the lower Fernie shales below 7,174 feet and getting close to the Madison limestone contact. Considerable gas has been met in recent drilling with strong showings of light crude.

On the Kootenay dome west of Calgary, Roxana Petroleum No. 1, section 8-24-7w5, bottoming at 2,152 feet, is 1,212 feet in the Madison. Attempts to shut off corrosive gas at 2,062 feet were only partly successful. On the Birch Ridge structure, Elbow Oils No. 1, LSD 11, section 35-22-5w5, is deepening from 4,960 feet after cementing, and has encountered additional gas.

On the north end of the Highwood-Sinclair structure, west of the South Turner Valley field, South End Petroleum, Ltd., of Vancouver, British Columbia, will complete the old Imperial-Highwood No. 1, LSD 3, section 36-18-3w5, which has been standing at 4,525 feet. The location is several miles due west and slightly north of Sterling-Pacific No. 4 crude producer.

Taber Field

On the Majestic structure west of Taber, Plains Petroleum No. 1, LSD 14, section 29-9-17w4, is producing considerable water with the crude oil from the Stray sand at 3,212 feet. It is making about 80 bbls. a day, with about half water. The crude is being trucked to Barnwell for shipment to Imperial Oil, Ltd., at Calgary. Production will be taken for a while from the present level, and the hole later deepened about 40 feet to the original objective.

Production is apparently coming from the Kootenay, but the horizon cannot be identified with either the Sunburst or Cut Bank sand. The company is planning to drill 10 additional wells.

Lethalta Oils No. 1, LSD 5, section 33-8-18w4, standing for several years at 2,261 feet, will be deepened to test the Taber sand.

Border Fields

In the Lethbridge area, Lethbridge Petroleum & Refining, Ltd., is locating its No. 1 test west of Lethbridge. Contracts have been let for preliminary work.

On the Cardston structure, Franco Oils No. 1, LSD 6, section 5-3-25w4, is below 4,515 feet with additional shows of oil and gas.

On the Del Bonita structure, Sunshine Oils No. 1, LSD 10, section 19-1-21w4, bottoming in the Madison limestone at 5,252 feet, is waiting for acid treatment.

East Central Alberta

In East Central Alberta, Dina Oil & Refining Co. No. 1, LSD 14, section 9-45-1w4, has resumed from 943 feet.

In the Wainwright field, Battleview Oils No. 1, NW section 32-47-5w4, is hauling timbers and equipment for a test on the Battleview anticline. Location is northeast of Wainwright, and the drilling is being handled by Stevens & Wilson.

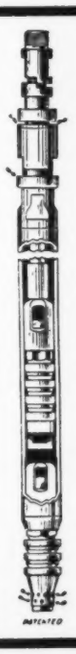
London-Ribstone Petroleums, Ltd., has been reorganized and will resume operations in the Ribstone field, east of Wainwright. London-Ribstone No. 1, LSD 14, section 10-43-3w4, standing at 2,433 feet, got the Paleozoic lime at 2,409 feet and will be deepened to test that formation. No. 2, LSD 5, section 22-43-3w4, is at 2,122 feet and will be deepened to a potential oil sand at 2,160 feet. No. 3 will later be drilled to test the upper sand at 2,107 feet. Operations will be started this month.

Drilling in Ontario

In the Brownsville field, Oxford County, Ontario, W. J. Aikens No. 2, Lot 24, Concession 11, Dereham Township, finished at 925 feet with 1,100,000 feet a day open flow. W. C. Patterson & Co. No. 3 Hagan, Lot 4, Concession 10, Bayham Township, Elgin County, finished in the same horizon with 2,350,000 feet a day. Patterson & Co. No. 4 has been located in Lot 5, Concession 10, Bayham Township.

East of the Eden field, Tillsonburg Oil & Gas Co. No. 2, Lot 7, Concession 1 South, Middleton Township, Norfolk County, finished a dry hole after drilling through the Clinton formation.

In the Petrolia field, Lambton County, Bert Wilson has moved heavy drilling rig for No. 1 deep test for the McIntosh Oil & Gas Co. on the Barrett farm in the flats east of Petrolia. The test will spud on April 14. George Carleton has sold his 42-acre oil farm on the Blind Line, with 10 producing wells, to an American syndicate.



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Mid-Continent Refiners

(Continued from Page 68)

NORTH LOUISIANA

Company and location—	Daily capacity	Av. dly. runs— April	March
Acme Ref. Co., Monroe	100	50	50
Arkansas Fuel Oil Co., Bossier City	25,000	20,000	20,000
Atlas Pipe Line Co., Shreveport	12,500	7,000	7,000
Bayou State Oil Corp., Hosston	750	500	500
Griswold Refs., Inc., Shreveport	1,000	(*)	1,000
Griswold Refs., Inc., Sandra	2,500	(*)	1,000
North Caddo Ref., Rodessa	1,000	500	500
Pelican Ref. Co., Converse	100	(*)	(*)
Rodessa Oil & Ref. Corp., Cedar Grove	7,500	5,500	5,000
Shoreline Oil Co., Lewis	5,000	3,000	3,000
Stanolind Oil & Gas Co., Superior	5,000	4,000	4,000
Texas Co., Shreveport	7,000	(*)	(*)
Total	66,450	40,550	42,050

*Shut down.

SOUTHWEST TEXAS

Amsco Ref. Co., Mirando City	4,500	3,150	3,150
Humble Oil & Ref. Co., San Antonio	5,000	3,000	2,500
Imperial Gasoline Corp., Houston	4,000	700	700
Ina Oil & Ref. Co., Hondo	400	50	50
Magnolia Pet. Co., Luling	8,000	5,500	5,100
Pettus Oil & Ref. Co., No. 1, Pettus	1,000	750	850
Pettus Oil & Ref. Co., No. 2 Pettus	1,000	650	650
Phoenix Ref. Co., San Antonio	1,200	1,000	1,000
Phoenix Ref. Co., Bruni	900	600	600
Pioneer Oil & Ref. Co., Somerset	2,000	900	900
Rado Ref. & Prod. Co., McAllen	800	500	500
Ranne Ref. Co., Mathis	1,000	1,000	500
Ranne Ref. Co., San Antonio	1,000	700	700
Rio Oil & Ref. Co., Sullivan City	1,000	300	300
Texas Co., San Antonio	3,000	2,800	2,800
Valley Ref. Co., Harlingen	1,000	700	700
Total	35,800	22,300	21,000

NORTH CENTRAL TEXAS

Allstate Ref. Co., Thrall	2,500	(*)	(*)
Baird Ref. Co., Baird	1,500	1,500	1,200
Coleman Ref. Co., Coleman	750	300	300
Continental Oil Co., Wichita Falls	6,000	3,000	4,100
Crown Oil Co., Fort Worth	2,000	600	600
Exchange Pet. Corp., Albany	800	250	250
Falls Ref. Co., Wichita Falls	2,000	300	300
Gainesville Ref. Corp., Gainesville	1,800	1,500	1,450
Gratex Ref. & Fuel Oil Co., Graham	500	285	300
Gulf Oil Corp., Fort Worth	6,000	4,600	5,000
Hightower Oil & Ref. Corp., Brownwood	750	100	100
Jacksboro Ref. Co., Jacksboro	250	50	50
La Salle Pet. Co., Burkburnett	3,500	800	800
Magnolia Pet. Co., Fort Worth No. 1	12,000	5,600	5,100
Midway Ref. Co., Coleman	300	150	150
Norgold Ref. Co., West Olney	500	200	200
North Texas Oil & Ref. Co., Gainesville	600	300	300
Ohio Oil Co., Fort Worth	5,000	4,600	4,600
Olney Oil & Ref. Co., North Olney	3,500	1,500	1,500
Panhandle Ref. Co., Wichita Falls	3,300	2,700	2,000
Panhandle Ref. Co., Lueders	1,000	800	800
Pilot Point Ref. Co., Pilot Point	500	100	100
Sinclair Ref. Co., Fort Worth	5,000	3,000	3,000
Southland Ref. Co., Megargel	500	200	200
Taylor Ref. Co., Taylor	6,000	1,000	800
Taxman Ref. Co., Wichita Falls	3,000	2,750	2,700
Texas Pacific Coal & Oil Co., Caddo	1,000	600	175
Tucker Ref. Co., Wichita Falls	250	200	175
Tydal Ref. Co., Gainesville	2,000	1,650	1,200
Tyrene Ref. Co., Anarene	500	500	500
Wagoner Ref. Co., Electra	6,000	3,500	3,500
Total	79,200	42,635	41,450

*Shut down.

WEST TEXAS AND PANHANDLE

Aero Gas Ref. Co., Pecos	225	100	100
Coltex Ref. Co., Colorado	12,500	8,000	8,000
Concho Ref. Co., San Angelo	250	100	100
Cosden Oil Co., Big Spring	12,500	9,000	9,000
Danciger Refs., Inc., Pampa	6,500	4,500	4,500
Danube Oil Corp., Borger	250	50	50
Gibson Oil Corp., Magic City	250	150	150
Gulf Oil Corp., Sweetwater	7,000	5,800	5,000
Howard County Ref. Co., Big Spring	2,000	600	600
Mertzon Ref. Co., Mertzon	500	250	250
Moutray Oil Co., Hawley	1,200	2,025	1,025
Onyx Ref. Corp., Hawley	1,500	1,100	1,200
Panhandle Ref. Co., Kings Mill	2,500	1,800	1,750
Phillips Pet. Co., Borger	50,000	24,700	21,300
Sageland Ref., Co., Sweetwater	1,000	500	500
Shamrock Oil & Gas Corp., Sunray	2,500	1,450	1,500
Shamrock Oil & Gas Corp., Meldavis	1,600	1,400	1,500
Stamford Ref. Co., Stamford	300	100	100
Standard Oil Co. of Texas, El Paso	14,000	9,700	9,650
Starlight Ref. Co., Ballinger	500	150	150
Texas Co., El Paso	2,000	1,000	1,000
Texas Co., Amarillo	6,000	3,000	2,500
West Texas Ref. Co., Pecos	6,000	1,500	1,375
Western Ref. Co., Mertzon	1,000	400	400
West Texas Oil & Ref. Co., Sweetwater	60	40	40
Wickett Pet. Co., Wickett	2,500	1,500	1,500
Total	127,335	77,915	73,240

*Shut down.

EAST TEXAS

Beacon Oil & Ref. Co., Henderson	4,500	380	340
Cascade Ref. Co., Reed Switch	3,000	(*)	760
Clay Ref. Co., Arp	2,500	3,045	2,960
Danciger Refs., Inc., Longview	10,000	5,000	2,500
East Texas Ref. Co., Longview	10,000	7,000	7,000
General American Ref. Co., No. 1, Gladewater	4,000	(*)	2,485
General American Ref. Co., No. 2, Overton	5,500	(*)	2,410
General American Ref. Co., No. 3, Arp	4,000	(*)	(*)
Glade Ref. Co., Gladewater	2,500	(*)	165
Houston Oil Co. of Tex., Viola	1,000	500	500
Hurricane Pet. Corp., Overton	5,000	3,570	3,690
Hurricane Pet. Corp., Arp Ref., Arp.	3,750	2,660	2,915
Kilgore Ref. Co., Inc., Kilgore	4,000	1,550	1,245
Magnolia Pet. Co., Corsicana	5,000	3,200	3,000
Master Pet. Co., Waco	1,000	1,000	(*)
Ocean Pet. Corp., Kilgore	3,000	1,730	1,415
Premier Oil Ref. of Texas, Willow Springs	4,500	3,000	3,000
Paluxy Asphalt Co., Talco	5,000	1,200	1,200
Panama Ref. Co., Kilgore	3,000	(*)	(*)
Roval Oil & Ref. Co., Kilgore	2,000	(*)	(*)
Seltex Ref. Co., Gladewater	3,000	1,660	1,400
Sinclair Ref. Co., Camp Switch	3,500	2,000	2,000
Solvex Refs., Inc., Gladewater	4,500	3,000	3,000
Southport Pet. Co., Kilgore	5,000	3,000	3,000
Texas Co., The, Dallas	16,000	7,500	7,000
Talco Asphalt & Ref. Co., Mt. Pleasant	5,200	(†)	(†)
Trinity Ref. Co., Gladewater	6,000	(*)	(*)
Tower Ref. Co., Overton	3,000	2,560	1,950
Total	128,525	53,555	53,935

*Shut down. †Under construction.

New York-Pennsylvania Gas Fields

(Continued from Page 78)

2,540 feet on the H. C. Kemp farm, Farmington Township, and at 3,690 feet on the C. G. Dearman farm, Middlebury Township. The latter well found the Tully at 3,527-3,610 feet.

Updegraff is shut down on location on the C. E. Erickson farm, Elk Township, Warren County, and Kent Kane and others have staked a location on Government Surface tract in Watson Township.

Potter Development Co. is drilling at 3,565 feet on the J. Chapin farm, Rockdale Township, and is building the rig for a test on the N. D. Dahl farm, Hayfield Township, both in Crawford County. McKenry and others are shut down at 2,950 feet on the Stellman farm wildcat in Rockland Township, Venango County.

New York Operations

Three tests are now drilling in Steuben County, New York, the deepest being the G. L. Cabot, Inc., well on the T. H. Wing farm in Greenwood Township now at 2,455 feet. Atwater and others are drilling at 1,510 feet on the Herrington farm in Woodhull Township and Sylvania Corp., at 1,810 feet on the William Hendrickson farm, Troupsburg Township.

Cunningham Natural Gas Co. is drilling at 2,320 feet on the H. Hotchkiss farm, Randolph Township, Cattaraugus County. Belmont Quadrangle Drilling Co. has the rig up for a test on the A. G. Hoffler farm, Leon Township, same county.

Southwest Texas Fields

(Continued from Page 81)

terest is centered on two wildcat tests. J. L. Collins is rigging up No. 1 Wheeler, a wildcat, 5 miles north of the McCampbell field. Elsewhere in the county, the Barnsdall Oil Co. is approaching critical depth on No. 2 Edwards. The company's No. 1, located on the Lamar Peninsula northeast of Rockport blew out at 7,994 feet. Last reported below 6,320 feet, the Barnsdall No. 2 Edwards will shortly be on the sand, and the area will receive a test.

Nueces County's active wildcats number two, with more tests planned for the near future. The Southern Minerals Corp. No. 1 King, 3 miles north of Agua Dulce is coring sand at 5,202 feet. The wildcat had sand at 4,021-33 feet which tested oil, mud and salt water. Taylor Petroleum Co. is starting a test on the Stiles lease in section 18 of the Petronilla ranch 8 miles east of Bishop. Wellington Oil Co. and Seaboard Oil Corp. are planning a test to be drilled 2 miles south of the Clara Driscoll field in western Nueces County. The wildcat will be located on the Dugger tract in section 125 of the Pauls Subdivision.

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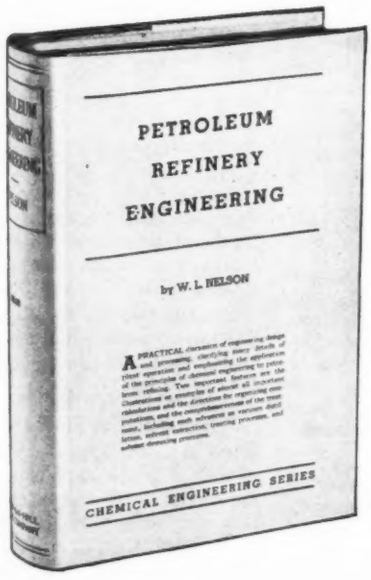

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WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Shell Oil Co., No. 1-20 Capitan, Santa Barbara Co.	32- 5-30	2,548	cmtd. 2,242
Barnsdall-Rio Grande, No. 19 Elwood, Santa Barbara	15- 4-29	3,728	flow. 190 b.d.
Signal Oil Co., No. 98-9 Elwood, Santa Barbara Co.	tideland	3,914	flow. 285 b.d.
Ericksson, G., No. 1 Santa Maria, Santa Barbara	16-10-34	2,010	sd. sh. drlg.
Union Oil Co., No. 2-V Santa Maria, Santa Barbara	30-10-33	1,558	sd. sh. drlg.
Union Oil Co., No. 1-O Santa Maria, Santa Barbara	21-10-34	2,753	sd. sh. drlg.
Union Oil Co., No. 12 Orcutt, Santa Barbara Co.	26- 9-34	4,023	O.S. drlg.
Union Oil Co., No. 17 Orcutt, Santa Barbara Co.	26- 9-34	3,880	sd. sh. drlg.
Union Oil Co., No. 18 Orcutt, Santa Barbara Co.	26- 9-34	203	cmtd. 203
Valley Oil Co., No. 1 Casmalia, Santa Barbara Co.	20- 9-34	1,412	sd. sh. drlg.
Barnsdall Oil Co., No. 6 Gato Ridge, Santa Barbara	9- 8-32	2,515	rig. to pump
Stewart-Carter Oil Co., No. 1 Gato Ridge, S. Barbara	4- 8-32	2,311	cmtd. 2,160
Petrol Corp., No. 3-A Gato Ridge, Santa Barbara Co.	9- 8-32	1,755	sd. sh. drlg.
Nine Springs Oil, No. 1 Los Olivos, Santa Barbara	9- 7-30	3,321	sd. sh. drlg.
Fisher, Dan, No. 1 Cuyama, Santa Barbara Co.	28-11-28	646	sd. sh. drlg.
Texas Co., No. 132 Shiells, Ventura Co.	4- 3-19	3,123	flow. 123 b.d.
Calumet Oil Co., No. 16 Shiells, Ventura Co.	3- 3-19	4,466	P.B. 3,310
Condor Oil Co., No. 1 Sespe, Ventura Co.	6- 4-19	1,580	br. sh. drlg.
Ivers, H. A., No. 14 Star, Sespe, Ventura Co.	1- 4-20	302	sd. sh. drlg.
Merchants Pet. Co., No. 7 Sespe, Ventura Co.	1- 4-20	918	sd. sh. drlg.
Speik Oil Co., No. 2 Sespe, Ventura Co.	33- 5-19	2,065	hd. sh. drlg.
Colima Oil Co., No. 2 Sespe, Ventura Co.	25- 5-19	2,105	sd. sh. drlg.
Bolsa Chica Oil Co., No. 5 Temescal, Ventura Co.	5- 4-18	1,268	fish. D.P.
Pacific Western Oil Co., No. 10 Temescal, Ventura Co.	3- 4-18	2,365	sd. sh. drlg.
St. Louis Oil Co., No. 3 Ojai, Ventura Co.	13- 4-24	854	rd. sd. drlg.
Continental Oil Co., No. 1 Red Mountain, Ventura Co.	7- 3-23	5,644	fish. D.P.
C. C. M. Oil Co., No. 2 Padre Canyon, Ventura Co.	23- 3-24	6,465	redrlg. 2,575
C. C. M. Oil Co., No. 5-A Padre Canyon, Ventura Co.	15- 3-24	3,176	cleaning out
Continental Oil Co., No. 3 Padre Canyon, Ventura Co.	15- 3-24	2,670	redrlg. 2,481
Honolulu Oil Corp., No. 1 South Mountain, Ventura	23- 3-21	6,744	pump. 40 b.d.
Calco Pet. Corp., No. 4 South Mountain, Ventura Co.	17- 3-20	4,051	sd. sh. drlg.
Associated Oil Co., No. 29 Lloyd, Ventura, Ventura	27- 3-23	5,165	sd. sh. drlg.
Associated Oil Co., No. 60 Lloyd, Ventura, Ventura	27- 3-23	2,210	sd. sh. drlg.
Associated Oil Co., No. 64 Lloyd, Ventura, Ventura	27- 3-23	5,191	sd. sh. drlg.
Associated Oil Co., No. 66 Lloyd, Ventura, Ventura	27- 3-23	3,950	sd. sh. drlg.
Associated Oil Co., No. 137 Lloyd, Ventura, Ventura	27- 3-23	5,420	sd. sh. drlg.
Shell Oil Co., No. 89 Taylor, Ventura, Ventura Co.	30- 3-23	8,087	flow. 2,695 b.d.
General Pet. Corp., No. 17 Barnard, Ventura, Ventura	23- 3-23	6,700	cmtd. 6,725
Continental Oil Co., No. 6 San Miguelito, Ventura Co.	24- 3-24	6,735	O.S. drlg.
C. C. M. Oil Co., No. 3-B Rincon, Ventura Co.	8- 3-24	3,943	O.S. drlg.
General Pet. Corp., No. 3-A Rincon, Ventura Co.	8- 3-24	4,512	cleaning out
Lube Oil Co., No. 1 Devils Den, Kern Co.	2-25-18	4,285	P.B. 3,868
Den Petroleum Co., No. 1 Devils Den, Kern Co.	20-25-19	3,506	sd. sh. drlg.
Texas Co., No. 2 Theta, Lost Hills, Kern Co.	11-26-20	541	sd. sh. drlg.
Tide Water A. O. Co., No. 12-A-3 Lost Hills, Kern Co.	11-26-20	1,779	O.S. drlg.
Peters Royalty Corp., No. 2 McKittrick, Kern Co.	32-29-22	1,698	pump. 40 b.d.
Welport Oil Co., No. 18 McKittrick, Kern Co.	26-29-21	1,040	sd. sh. drlg.
Continental Oil Co., No. 1 Wasco, Kern Co.	8-27-24	9,545	cleaning out
Seaboard Oil Corp., No. 1 Wasco, Kern Co.	26-27-24	5,000	cmtd. 4,996
Belridge Oil Co., No. 24-35 North Belridge, Kern Co.	35-27-20	5,620	sd. sh. drlg.
Belridge Oil Co., No. 62-27 North Belridge, Kern Co.	27-27-20	7,687	br. sh. drlg.
Belridge Oil Co., No. 21-1 North Belridge, Kern Co.	1-28-20	6,578	br. sh. drlg.
Tide Water Associated, No. 6 North Belridge, Kern	34-27-20	1,520	sd. sh. drlg.
Dovle Pet. Co., No. 2 Quinn, Jasmine, Kern Co.	15-25-27	1,965	sd. sh. drlg.
Honolulu Oil Corp., No. 25 Round Mountain, Kern Co.	18-28-29	2,230	hd. sh. drlg.
Honolulu Oil Corp., No. 65 Round Mountain, Kern Co.	18-28-29	1,840	pump. 208 b.d.
Tide Water Associated, No. 3 Kern Front, Kern Co.	4-28-27	2,811	P.B. 2,735
Tide Water Associated, No. 42 Kern Front, Kern Co.	23-28-27	1,931	sd. sh. drlg.
Dougan Oil Co., No. 2 Kern Front, Kern Co.	17-28-27	2,096	sd. sh. drlg.
M. H. Whittier Co., No. 4 Kern Front, Kern Co.	16-28-27	2,826	rig. to pump
Oil, Inc., No. 7-2 Kern Front, Kern Co.	13-28-27	1,190	sd. sh. drlg.
Barnhart & Morrow, No. 1 Davies, Kern Front, Kern	3-28-27	2,631	will redrl.
California Star Oil Co., No. 7-80 Kern Front, Kern Co.	22-28-27	2,654	test. wet
California Star Oil Co., No. 9-40 Kern Front, Kern Co.	22-28-27	2,699	P.B. 2,647
Standard Oil Co., No. 5 Ward, Kern Front, Kern Co.	24-28-27	1,970	reaming
Standard Oil Co., No. 5-9 Kern Front, Kern Co.	9-28-27	2,810	sd. sh. drlg.
Pioneer Oil Co., No. 1 Kern Front, Kern Co.	18-28-28	1,115	tested wet
Texas Co., No. 6 Lehman, Kern Front, Kern Co.	23-28-27	2,008	sd. sh. drlg.
National Oil Co., No. 9 Gates, Kern Front, Kern Co.	2-28-29	1,821	sd. sh. drlg.
Terry & Associates, No. 1-A Kern River, Kern Co.	4-29-28	1,398	sd. sh. drlg.
Superior Oil Co., No. 1 Bakersfield, Kern Co.	36-29-28	3,150	sd. sh. drlg.
Golden Bear Oil Co., No. 6 Premier, Kern Co.	32-27-27	2,680	O.S. drlg.
Bojaki Oil Co., No. 1 Premier, Kern Co.	28-27-27	1,960	idle
Pebble Beach Oil Co., No. 4 Newhope, Premier, Kern	29-27-27	2,659	sd. sh. drlg.
Ekoh Oil Co., No. 2 Vedder, Mount Poso, Kern Co.	28-26-28	1,454	hd. sd. drlg.
Harp, E. J., No. 1 Mount Poso, Kern Co.	27-26-28	1,845	P.B. 1,460
C. C. M. Oil Co., No. 1 Alford, Mount Poso, Kern Co.	35-27-27	3,801	hd. sh. drlg.
Chevalier, J. J., No. 3 S. P., Mount Poso, Kern Co.	3-27-28	131	sd. sh. drlg.
Magee, H. H., No. 2 Fruitvale, Kern Co.	23-29-27	3,244	P.B. 3,235
H. & H. Oil Co., No. 1 Fruitvale, Kern Co.	23-29-27	3,256	cleaning out
Western Gulf Oil Co., No. 35 Fruitvale, Kern Co.	21-29-27	3,952	tested wet
Western Gulf Oil Co., No. 36 Fruitvale, Kern Co.	21-29-27	1,851	sd. sh. drlg.
Kasey & Associates, No. 1 Fruitvale, Kern Co.	23-29-27	3,114	P.B. 2,892
Exeter Oil Co., No. 2 Fruitvale, Kern Co.	21-29-27	3,765	sd. sh. drlg.
Pal-Pen Oil Co., No. 1 Fruitvale, Kern Co.	23-29-27	3,152	dry; abd.
Seahawk Pet. Co., No. 3 Fruitvale, Kern Co.	23-29-27	3,214	pump. 225 b.d.
Banducci, L. J., No. 2-E Fruitvale, Kern Co.	26-29-27	3,390	cmtd. 3,374
Magnet Oil Co., No. 4 Fruitvale, Kern Co.	21-29-27	4,190	pump. 140 b.d.
Kelley, C. J., No. 2 Fruitvale, Kern Co.	23-29-27	2,580	sd. sh. drlg.
Vesta Oil Co., No. 1 Mountain View, Kern Co.	19-30-29	4,970	cmtd. 4,785
Wood-Callahan Oil Co., No. 3 Mountain View, Kern	25-30-28	5,965	completing
Hogan Pet. Co., No. 4 Symons, Mountain View, Kern	5-31-29	6,252	sd. sh. drlg.
Hogan Pet. Co., No. 8 Wharton, Mountain View, Kern	32-30-29	5,866	will cmt.
Liko Pet. Co., No. 1 Mountain View, Kern Co.	19-30-29	5,394	sd. sh. drlg.
Ohio Oil Co., No. 1-B Derby, Mountain View, Kern Co.	33-30-29	5,910	P.B. 5,165
Trico Oil Co., No. 2 Wilson, Mountain View, Kern Co.	13-30-28	4,765	sd. sh. drlg.
General Pet. Corp., No. 5 Mountain View, Kern Co.	19-30-29	810	sd. sh. drlg.
Mohawk Pet. Co., No. 9-C Mountain View, Kern Co.	30-30-29	5,625	sd. sh. drlg.
Metro Oil Co., No. 1 Edison, Kern Co.	6-30-29	1,278	sd. sh. drlg.
Johnson-Leaf Oil Co., No. 1 Edison, Kern Co.	24-30-29	1,525	redrlg. 1,331
General Petroleum Corp., No. 1 Arvin, Kern Co.	26-31-29	7,462	P.B. 7,454
Bear Mountain Oil Co., No. 1 Arvin, Kern Co.	21-31-30	2,160	granite; abd.
Arkelo Oil Co., No. 1 Lerdo, Kern Co.	23-28-26	10,050	fish. D.P.
Tide Water Associated, No. 1 Rio Bravo, Kern Co.	30-29-25	9,002	sd. sh. drlg.
Union Oil Co., No. 1-34 Rio Bravo, Kern Co.	34-28-25	1,670	sd. sh. drlg.
Continental Oil Co., No. 1 Rosedale, Kern Co.	12-29-26	5,693	gr. sd. drlg.
Standard Oil Co., No. 11-2 Greeley, Kern Co.	20-29-26	7,935	sd. sh. drlg.
Standard Oil Co., No. 11-3 Greeley, Kern Co.	20-29-26	7,590	sd. sh. drlg.
Standard Oil Co., No. 12-1 Greeley, Kern Co.	30-29-26	7,884	sd. sh. drlg.
Standard Oil Co., No. 14-1 Greeley, Kern Co.	4-30-26	7,686	sd. sh. drlg.
Mohawk Pet. Co., No. 1 Greeley, Kern Co.	23-29-25	6,331	sd. sh. drlg.
Union Oil Co., No. 1 San Emidio, Kern Co.	34-11-22	4,805	dry; abd.
Shell Oil Co., No. 21-14 Old River, Kern Co.	14-30-25	3,952	sd. sh. drlg.
Shell Oil Co., No. 23-30 Ten Section, Kern Co.	30-30-26	7,284	sd. sh. drlg.
Signal Oil & Gas Co., No. 1 Ten Section, Kern Co.	21-30-27	8,000	sd. sh. drlg.
Superior Oil Co., No. 8 Ten Section, Kern Co.	11-30-26	10,455	sd. sh. drlg.
Ohio Oil Co., No. 4-A Buena Vista Lake, Kern Co.	32-31-26	5,276	completing
C. C. M. Oil Co., No. 23-21 Midway-Sunset, Kern Co.	21-32-23	1,931	sd. sh. drlg.
C. C. M. Oil Co., No. 26-21 Midway-Sunset, Kern Co.	21-32-23	2,335	fish. bailer
C. C. M. Oil Co., No. 1-J Midway-Sunset, Kern Co.	21-32-23	2,200	pump. 130 b.d.
Midcrude Oil Co., No. 2 Midway-Sunset, Kern Co.	22-32-23	1,590	redrlg. 1,200
General Pet. Corp., No. 49 Midway-Sunset, Kern Co.	24-31-23	4,424	bailing
R. & W. Oil Co., No. 4 Midway-Sunset, Kern Co.	6-11-23	3,420	cmtd. 3,125
Colby, L. W., No. 1 Midway-Sunset, Kern Co.	12-11-24	360	sd. sh. drlg.
Merritt-Annex Oil Co., No. 4 Midway-Sunset, Kern Co.	25-12-24	3,003	sd. sh. drlg.
Standard Oil Co., No. 39-23-D Midway-Sunset, Kern	23-32-24	3,365	pump. 235 b.d.
Standard Oil Co., No. 7-33-D Midway-Sunset, Kern	33-32-24	3,155	bailing
Standard Oil Co., No. 123-33-D Midway-Sunset, Kern	33-32-24	2,993	sd. sh. drlg.
Standard Oil Co., No. 55-33-D Midway-Sunset, Kern	33-32-24	3,305	P.B. 3,110
Shell Oil Co., No. 2 McKeon, Midway-Sunset, Kern Co.	22-32-23	1,264	sd. sh. drlg.
Linderman Oil Corp., No. 1 Midway-Sunset, Kern Co.	22-32-23	531	sd. sh. drlg.
Richfield Oil Co., No. 12 Midway-Sunset, Kern Co.	6-32-23	1,635	P.B. 1,502
Richfield Oil Co., No. 8-A Midway-Sunset, Kern Co.	6-32-23	1,309	pump. 92 b.d.
Holly Dev. Co., No. 1 Midway-Sunset, Kern Co.	22-32-23	2,362	sd. sh. drlg.
North American Oil Co., No. 5 Midway-Sunset, Kern	25-12-24	4,725	sd. sh. drlg.
Texas Co., No. 19 Midway-Sunset, Kern Co.	32-24-24	2,890	pump. 290 b.d.
Union Oil Co., No. 5 Williams, Midway-Sunset, Kern	22-32-23	2,050	sd. sh. drlg.
Birch-Ranch Oil Co., No. 2 Midway-Sunset, Kern Co.	22-32-23	2,165	pump. 50 b.d.
Valley Oil Co., No. 1 Midway-Sunset, Kern Co.	18-32-23	2,635	idle
Tide Water Associated, No. 31 Midway-Sunset, Kern	35-31-22	1,328	pump. 40 b.d.
Zamloch, Carl, No. 2 Midway-Sunset, Kern Co.	22-32-23	2,080	sd. sh. drlg.
Alford Oil Co., No. 8 Fried, Midway-Sunset, Kern Co.	25-12-24	2,552	sd. sh. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Bldg., building.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
C.P., casing pressure.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
C.L., center line.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., drv and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd, sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.R.T., rigging up rotary tools.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sd. sh., sandy shale.
Sdtr., or St., sidetracking.
S.D.P.L., shut down for pipe line.
S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting on cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.O.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., wait on standard rig.
Wtr., water.

Quality Oil Co., No. 4 Bull, Midway-Sunset, Kern Co.	22-32-23	2,200	fish. D.P.
Quality Oil Co., No. 5 Bull, Midway-Sunset, Kern Co.	22-32-23	1,785	sd. sh. drlg.
Quality Oil Co., No. 5 W.P., Midway-Sunset, Kern Co.	27-32-23	1,551	sd. sh. drlg.
Honolulu Oil Corp., No. 36 Midway-Sunset, Kern Co.	14-32-24	3,570	pump. 132 b.d.
Honolulu Oil Corp., No. 46 Midway-Sunset, Kern Co.	14-32-24	3,571	sd. sh. drlg.
Petrolia Royalties, No. 1 Midway-Sunset, Kern Co.	21-32-22	1,160	rig. to pump
Elk Hills Pet. Co., No. 1 Elk Hills, Kern Co.	14-31-24	5,994	resume work
Reserve Oil & Gas Co., No. 33-1 Tejon, Kern Co.	33-11-19	4,969	idle
Reserve Oil & Gas Co., No. 33-2 Tejon, Kern Co.	33-11-19	4,474	bailing
Reserve Oil & Gas Co. No. 33-3 Tejon, Kern Co.	33-11-19	4,431	shut in
Ohio Oil Co., No. 2 Tejon, Kern Co.	21-11-19	7,421	sd. sh. drlg.
Western Gulf, No. 3 Cantua, Fresno Co.	3-17-15	8,530	cleaning out
Tide Water Associated, No. 3 Kettleman No., Fresno	35-21-17	8,858	cleaning out
K. N. D. A., No. 4-18-J Kettleman North, Fresno Co.	18-21-17	9,400	redrlg. 9,351
K. N. D. A., No. 36-28-J Kettleman North, Fresno Co.	28-21-17	8,035	O.S. drlg.
K. N. D. A., No 56-28-J Kettleman North, Fresno Co.	28-21-17	5,761	br. sh. drlg.
K. N. D. A., No. 65-28-J Kettleman North, Fresno Co.	28-21-17	7,000	hd. sd. drlg.
K. N. D. A., No. 85-32-J Kettleman North, Fresno Co.	32-21-17	8,500	will cmt.
K. N. D. A., No. 63-34-J Kettleman North, Fresno Co.	34-21-17	6,821	sd. sh. drlg.
K. N. D. A., No. 61-4-P Kettleman North, Fresno Co.	4-22-17	5,685	br. sh. drlg.
Standard Oil, No. 8-19-J Kettleman North, Fresno	19-21-17	8,500	sd. sh. drlg.
Standard Oil, No. 85-19-J Kettleman North, Fresno	19-21-17	8,240	flow. 468 b.d.
Standard Oil, No. 38-33-J Kettleman North, Fresno	33-21-17	7,501	sd. sh. drlg.
Standard Oil, No. 81-33-J Kettleman North, Fresno	33-21-17	5,374	sd. sh. drlg.
Standard Oil, No. 78-3-P Kettleman North, Kings Co.	3-22-17	6,860	sd. sh. drlg.
Temblor Oil Co., No. 1 Kettleman Middle, Kings Co.	25-23-18	5,935	cleaning out
Central Cal. Utilities, No. 3 Dudley, Kings Co.	11-23-19	1,221	cmtd. 778
Clare, A. S., No. 1 Corcoran, Kings Co.	30-20-22	366	sd. sh. drlg.
Norell, T. G., No. 1 Tulare Lake, Kings Co.	7-21-21	6,179	resume work
Stone, G. S., No. 1 Tulare Lake, Kings Co.	25-20-20	1,101	cmtd. 790
Tide Water Associated Oil Co., No. 2 Avenal, Kings	35-23-17	2,687	sd. sh. drlg.
Barnsdall Oil Co., No. 1 K.C.L., San Luis Obispo Co.	1-32-20	2,510	sd. sh. drlg.
Burkholder Oil Co., No. 1 Clay, San Luis Obispo Co.	14-10-26	260	sd. sh. drlg.
Calif. Producing Co., No. 1 Pattiway, San Luis Obispo	19-10-24	751	sd. sh. drlg.
Pismo Pet. Co., No. 1 Pismo, San Luis Obispo Co.	5-32-13	2,975	resume work
Temblor Oil Co., No. 1 Panorama, San Luis Obispo	22-32-21	573	sd. sh. drlg.
Lewis, A. O., No. 1 Pecho, San Luis Obispo Co.	34-30-10	2,310	cleaning out
Martin, J. D., No. 4-A Pismo, San Luis Obispo Co.	5-32-13	3,262	cleaning out
Texas Co., No. 1 King City, Monterey Co.	30-19- 7	3,897	br. sh. drlg.
Anderson, Amil, No. 1 Cholame, Monterey Co.	15-24-14	500	sd. sh. drlg.
Shell Oil Co., No. 1 Pleyto, Monterey Co.	34-24-10	8,994	P.B. 8,750
Shell Oil Co., No. 2 Pleyto, Monterey Co.	34-24-10	7,480	sd. sh. drlg.
Texas Co., No. 2 Eureka, Humboldt Co.	22- 3- 1	7,418	cmtd. 6,580
Amerada Pet. Co., No. 1 Mayhood, Rio Vista, Solano	35- 4- 2	4,532	shut in
Amerada Pet. Co., No. 2 Drouin, Rio Vista, Solano	26- 4- 2	3,505	sd. sh. drlg.
Tide Water A. O. Co., No. 1 Sargent, San Benito Co.	5-12- 4	6,841	hd. sd. drlg.
Buttes Oilfields, Ltd., No. 1 Kent, Sutter Co.	2-15- 1	5,210	cleaning out
Jennings, E. P., No. 1 Allensworth, Tulare Co.	4-24-23	2,709	P.B. 2,690
Coast Expl. Co., No. 1 Staten, San Joaquin Co.	2- 3- 4	451	cmtd. 405
Standard Oil Co., No. 3 McDonald, San Joaquin Co.	24- 2- 4	971	sd. sh. drlg.

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Caminol Oil Co., No. 1 El Segundo, Los Angeles Co.	18- 3-14	7,367	rig. compres.
Richfield Oil Co., No. 4 El Segundo, Los Angeles Co.	18- 3-14	7,535	flow. 125 b.d.
Richfield Oil Co., No. 1 S.F., El Segundo, Los Angeles	18- 3-14	1,640	sd. sh. drlg.
Ohio Oil Co., No. 3 El Segundo, Los Angeles Co.	7- 3-14	5,383	sd. sh. drlg.
Texas Co., No. 2-1 El Segundo, Los Angeles Co.	17- 3-14	7,756	P.B. 7,715
Republic Pet. Co., No. 4 El Segundo, Los Angeles	18- 3-14	7,429	flow. 460 b.d.
Republic Pet. Co., No. 5 El Segundo, Los Angeles	18- 3-14	7,387	sd. sh. drlg.
Royalty Service Corp., No. 1 El Segundo, Los Angeles	7- 3-14	7,389	flow. 300 b.d.
Union Oil Co., No. 2 El Segundo, Los Angeles Co.	18- 3-14	3,980	sd. sh. drlg.
Leora Oil Co., No. 1 Hermosa, Los Angeles Co.	31- 3-14	5,380	sd. sh. drlg.
Signal Finance Co., No. 1 Hawthorne, Los Angeles Co.	10- 3-14	9,395	cleaning out
C. C. M. Oil Co., No. 15 Torrance, Los Angeles Co.	31- 3-14	3,843	hd. sh. drlg.
Two & One Oil Co., No. 6 Torrance, Los Angeles Co.	31- 3-14	4,462	P.B. 4,440
Willett, P. W., No 1. Torrance, Los Angeles Co.	18- 4-14	3,590	rig. to pump
Abrams, John, & Assoc., No. 1 Torrance, Los Angeles	16- 4-14	4,068	pump. wtr.
Calmore Oil Co., No. 1 Torrance, Los Angeles Co.	31- 3-14	4,354	sd. sh. drlg.
Swyer Oil Co., No. 1 Torrance, Los Angeles Co.	18- 4-14	4,220	sd. sh. drlg.
McLaren & Assoc., No. 1 Palos Verdes, Los Angeles	27- 4-14	3,992	redrlg. 1,765
Country Club Oil, No. 1 Inglewood, Los Angeles Co.	19- 2-14	3,051	idle
Standard Oil Co., No. 82 Inglewood, Los Angeles Co.	8- 2-14	3,953	sd. sh. drlg.
Shell Oil Co., No. 89 Reyes, Dominguez, Los Angeles	33- 3-13	6,711	cleaning out
Shell Oil Co., No. 90 Reyes, Dominguez, Los Angeles	33- 3-13	8,365	O.S. drlg.
Union Oil, No. 50 Callender, Dominguez, Los Angeles	33- 3-13	10,012	sd. sh. drlg.
Union Oil, No. 52 Callender, Dominguez, Los Angeles	33- 3-13	3,890	sd. sh. drlg.
Union Oil, No. 53 Callender, Dominguez, Los Angeles	33- 3-13	7,051	sd. sh. drlg.
Union Oil, No. 9 Carson, Dominguez, Los Angeles Co.	33- 3-13	7,428	sd. sh. drlg.
Shell Oil Co., No. 1 Rosecrans, Los Angeles Co.	20- 3-13	7,744	P.B. 7,602
Barnsdall Oil, No. 12 O'Dea, Rosecrans, Los Angeles	18- 3-13	4,195	will deepen
Union Oil, No. 16 D.R., Playa Del Rey, Los Angeles	27- 2-15	6,099	pump. 110 b.d.
Burt, A. G., No. 1 Newhall, Los Angeles Co.	36- 4-17	574	cleaning out
Holbrook Oil Co., No. 1 Newhall, Los Angeles Co.	28- 4-16	4,950	gr. sd. drlg.
Selegna Oil Co., No. 3 Wilmington, Los Angeles Co.	33- 4-13	3,588	flow. 440 b.d.
General Pet. Corp., No. 4-E Wilmington, Los Angeles	5- 5-13	3,622	flow. 217 b.d.
General Pet., No. 1 Ford, Wilmington, Los Angeles	4- 5-13	2,476	redrlg. 750
General Pet., No. 2 Ford, Wilmington, Los Angeles	4- 5-13	2,494	sd. sh. drlg.
General Pet., No. 3 Ford, Wilmington, Los Angeles	4- 5-13	1,652	redrlg. 1,295
General Pet., No. 4 Ford, Wilmington, Los Angeles	4- 5-13	1,951	sd. sh. drlg.
General Pet., No. 5 Ford, Wilmington, Los Angeles	4- 5-13	1,439	sd. sh. drlg.
General Pet. Corp., No. 2-P Wilmington, Los Angeles	4- 5-13	1,690	sd. sh. drlg.
Getty Oil Co., No. 3 Wilmington, Los Angeles Co.	33- 4-13	3,575	flow. 570 b.d.
Getty Oil Co., No. 4 Wilmington, Los Angeles Co.	33- 4-13	2,565	recmtd. 2,560
Getty Oil Co., No. 5 Wilmington, Los Angeles Co.	33- 4-13	2,491	sd. sh. drlg.
Getty Oil Co., No. 6 Wilmington, Los Angeles Co.	33- 4-13	2,580	sd. sh. drlg.
Brain, Cooper & Haney, No. 1 Wilmington, L. Angeles	33- 4-13	3,590	flow. 340 b.d.
Bankline Oil, No. 1 C.Y., Wilmington, Los Angeles	34- 4-13	3,547	pump. 135 b.d.
Crail Bros., Inc., No. 1 Wilmington, Los Angeles Co.	33- 4-13	3,296	reaming
Pongratz Oil Co., No. 1 Wilmington, Los Angeles Co.	33- 4-13	2,500	sd. sh. drlg.
Union Pacific R.R., No. 1 Wilmington, Los Angeles	4- 5-13	3,555	reaming
Union Pacific R.R., No. 2 Wilmington, Los Angeles	4- 5-13	3,140	sd. sh. drlg.
Union Pacific R.R., No. 3 Wilmington, Los Angeles	4- 5-13	2,417	sd. sh. drlg.
Union Pacific R.R., No. 5 Wilmington, Los Angeles	4- 5-13	2,543	sd. sh. drlg.
Union Pacific R.R., No. 8 Wilmington, Los Angeles	33- 4-13	2,151	sd. sh. drlg.
Wilbur, V.R.G., No. 1 Wilmington, Los Angeles Co.	28- 4-13	3,592	pump. 130 b.d.
Ring Oil Co., No. 1 Wilmington, Los Angeles Co.	5- 5-13	2,782	sd. sh. drlg.
Royalty Service, No. 22-7 Wilmington, Los Angeles	33- 4-13	3,623	flow. 745 b.d.
Royalty Service, No. 21-5 Wilmington, Los Angeles	34- 4-13	2,534	sd. sh. drlg.
Royalty Service, No. 2-C Wilmington, Los Angeles	5- 5-13	3,685	pump. 150 b.d.
Gilmore Oil Co., No. 842-1 Wilmington, Los Angeles	33- 4-13	3,590	flow. 590 b.d.
Gauthier Oil Co., No. 2 Wilmington, Los Angeles Co.	27- 4-13	3,700	reaming
Drillers, Inc., No. 1 Whittier, Los Angeles Co.	22- 2-11	1,654	sd. sh. drlg.
Richfield Oil Co., No. 2 Nutt, Montebello, Los Angeles	5- 2-11	5,856	P.B. 5,713
Richfield Oil, No. 1 Estrada, Montebello, L. Angeles	5- 2-11	4,173	sd. sh. drlg.
Texas Co., No. 16 Baldwin, Montebello, Los Angeles	6- 2-11	5,425	cmtd. 5,420
St. Helens Pet., No. 6 P.&B., Montebello, Los Angeles	5- 2-11	7,199	C.P. 5,770
Union Oil Co., No. 26 Montebello, Los Angeles Co.	1- 2-12	3,805	sd. sh. drlg.
Texas Co., No. 13-H.K., Long Beach, Los Angeles Co.	19- 4-12	3,197	sd. sh. drlg.
Hilltop Oil Co., No. 1 Long Beach, Los Angeles Co.	19- 4-12	1,831	sd. sh. drlg.
Hobbs Pet. Corp., No. 1 Long Beach, Los Angeles Co.	29- 4-12	2,960	pump. 20 b.d.
Hathaway, No. 2 Fulton, Santa Fe Spgs., L. Angeles	6- 3-11	4,180	cmtd. 4,120
Union Oil Co. No. 100 Santa Fe Springs, Los Angeles	6- 3-11	10,710	sd. sh. drlg.
Julian & Criswell, No. 1 Walnut, Los Angeles Co.	5- 2- 9	1,376	reaming
Re-Mine Oil Co., No. 2 Huntington, Orange Co.	2- 6-11	4,570	rig. to pump
Texas Co., No. 8 Brown, Huntington, Orange Co.	11- 6-11	3,390	sd. sh. drlg.
Richrow Oil Co., No. 2 Huntington, Orange Co.	34- 5-11	5,200	bailing
Orco Oil Co., No. 5 Huntington, Orange Co.	2- 6-11	4,697	cmtd. fish
Union Oil Co., No. 24-C Huntington, Orange Co.	34- 5-11	3,978	sd. sh. drlg.
Commander Oil Co., No. 1 Newport, Orange Co.	29- 6-10	6,287	br. sh. drlg.
Fullerton Oil Co., No. 20 Brea, Orange Co.	2- 3-10	5,483	reaming
Standard Oil Co., No. 63 Emery, West Coyote, Orange	24- 3-11	2,685	sd. sh. drlg.
Hogan Pet. Co., No. 1 McNally, West Coyote, Orange	23- 3-11	2,531	sd. sh. drlg.
Bandini Pet. Co., No. 1 East Covote, Orange Co.	17- 3- 9	2,855	rig. to pump
Dolicia Oil Co., No. 2 East Coyote, Orange Co.	24- 3-10	3,534	cleaning out
Tide Water A. O. Co., No. 52 East Coyote, Orange Co.	13- 3-10	3,650	sd. sh. drlg.
Standard Oil Co., No. 2-8 East Coyote, Orange Co.	22- 3-10	4,011	sd. sh. drlg.
Shell Oil Co., No. 1 Mathis, Anaheim, Orange Co.	23- 4-10	4,944	sd. sh. drlg.
Joseph, Arthur, No. 1 Richfield, Orange Co.	29- 3- 9	3,271	sd. sh. drlg.
Principal Oil Co., No. 1 Richfield, Orange Co.	36- 3- 9	1,570	sd. sh. drlg
Bachman Pet. Co., No. 1 Richfield, Orange Co.	29- 3- 9	3,810	pump. 38 b.d.
Union Oil Co., No. 44 Chapman, Richfield, Orange Co.	29- 3- 9	3,465	pump. 215 b.d.
Union Oil Co., No. 45 Chapman, Richfield, Orange Co.	29- 3- 9	3,469	pump. 180 b.d.
Union Oil Co., No. 8 Coyle, Richfield, Orange Co.	29- 3- 9	3,261	sd. sh. drlg.

KANSAS

Week ending April 3 (Descriptions are east unless marked otherwise)

Barton County

S. E. Bailey No. 1 Hammeke, NE NE SW sec. 12-18-12w. O.W.D.D.; drlg. 1,500 ft.
C. L. Carlock No. 1 Ehly, NE NE SE sec. 5-18-11w. Rig.
C. L. Carlock et al No. 1 Leibel, SE NE SE sec. 18-18-11w. Anhy. 681 ft.; fsg. 1,-860 ft.
George Dickey et al No. 1 Boger, SE SE NE sec. 15-16-13w. R.U.
Hendon Drlg. Co. and Morgan & Flynn No. 1 Robenseifer, C NW sec. 7-18-15w. Drlg. 930 ft.
Indian Terr. Illm. Oil Co. No. 1 Schrapel, SE SE NE sec. 26-20-11w. Sil. 3,295 ft. (cor.); T.D. 3,325 ft.; acd.; P. 497 B.O. in 11 hrs.
S. L. Parks No. 1 Peach, SE cor. sec. 24-16-14w. Drlg. 3,000 ft.
C. L. Price et al No. 1 Kraft, SW NW NE sec. 10-17-11w. Drlg. 2,945 ft.
Stanolind O. & G. Co. No. 1 Meggars, SW cor. sec. 21-20-11w. Rig.
E. F. Wakefield et al No. 1 Scheuerman, NE NE SW sec. 31-16-15w. U.R. at 454 ft.
C. H. Weaver et al No. 1 Stumps, NE cor. sec. 3-17-12w. B.R.
Ralph Wixson and Union O. & G. Co. No. 1 Frederick, NW cor. sec. 12-16-13w. Anhy. 862 ft.; drlg. 1,662 ft.

Butler County

A. M. Landon et al No. 1 McCaig, NE NE SE sec. 13-28-6. Sd. 2,720-40 ft.; P.B. to 2,737 ft.; flowed 50 B.O. in 30 min.
Sid Neff et al No. 1 Church, SW NE SE sec. 8-28-5. O.W.D.D.; drlg. 785 ft.
C. L. Seibel et al No. 1 Bisagno, SE SE NW sec. 24-25-6e. Drlg. 825 ft.
Vickers Pet. Co. No. 1 Voth, C N½ NE NE sec. 32-24-4e. Drlg. 875 ft.

Chautauqua County

Ira Scott et al No. 1 Lamba, SW NW NE sec. 18-33-13. S.D. 410 ft.
E. J. Shaffer No. 1 Nuckolls, NW cor. sec. 12-33-19. Drlg. 900 ft.
W. M. McKnabb No. 1 Griffith, SW cor. sec. 11-32-10. Set 12-in. 390 ft.; C.O.

Cowley County

Bess & Gralapp et al No. 1 Wakefield, NE SE SW sec. 18-30-6. B.R.
Elmer Ash et al No. 1 Bolack, NW NW SE sec. 22-32-6. B.R.
W. M. McKnabb No. 1 Community, C NE NW sec. 14-34-3e. O.W.D.D.; drlg. 3,-720 ft.
W. M. McKnabb No. 1 Weldschmidt, SW SW NW sec. 18-34-6e. Base L. 3,449 ft.; drlg. 3,503 ft.
Tom Palmer No. 1-A Lowe, SW SE SE sec. 3-32-5. Drlg. 1,710 ft.
Ryan Consolidated Co. No. 1 Couch, SW SW SE sec. 13-30-5. Drlg. 1,520 ft.
L. H. Wentz and Amerada Pet. Corp. No. 1 Rush, NW SW SW sec. 36-34-6e. Drlg. 2,270 ft.

Decatur County

C. L. Bruce et al No. 1 Newbold, C NE SE sec. 34-2s-28w. Bldg. rig.

Elk County

L. H. Wentz et al No. 1 Love, SW SE NE sec. 35-30-9. Drlg. 495 ft.

Ellis County

Billings No. 1 Smith, SE SE NW sec. 14-12-16w. Rig.
Bridgeport Machine Co. et al No. 1 Froelick, NW NW SE sec. 4-13-16w. Drlg. 1,025 ft.
Empire O. & R. Co. No. 1 Hall, SE cor. sec. 2-12-17w. Sil. 3,697-3,702 ft.; H.F.W. 3,704 ft., T.D.; D.&A.
Ted Kors et al No. 1 Koblitz, SE SW NW sec. 23-12-18w. Pay 3,694-98 ft.; swb. 48 B.O. and swbd. down; T.D. 3,699 ft.; P.B. 3,697½ ft.; P. 13 B.O. and pumped off.
Lario O. & G. Co. et al No. 1 Henderson, SW SW NE sec. 27-11-18w. Drlg. 730 ft.
Murphy Oil Co. No. 1 Wiesner, SE SE SW sec. 12-14-19w. S.D. 3,470 ft.
Noble Pet. Corp. No. 1 O'Laughlin, NW NW SE sec. 13-12-19w. Anhy. 1,550 ft.; drlg. 2,215 ft.
Sunray Oil Co. No. 1 Befort, NE cor. sec. 11-14-20w. Cong. 3,835 ft.; LaMotte 3,887 ft.; showing wtr.; S.D. 3,903 ft.
Earl Wakefield No. 1 Putnam Mortgage Co., SE SE NW sec. 32-15-17w. Drlg. 1,465 ft.

Ellsworth County

Frost et al No. 1 Dolechek, NE NE SW sec. 36-14-8w. H.F.W. 2,585 ft.; U.R. at 2,605 ft.
Orville Lea No. 1 Larkin, NW cor. sec. 15-16-8w. R.U.

Finney County

Keith & Olson Drlg. Co. No. 1 Ely, NW NW SW sec. 34-22-29w. Sd. 4,644-55 ft.; drlg. 5,197 ft.

Greenwood County

Lauck & Moncrief No. 1 Gruber, NW cor. sec. 5-23-13. Drlg. 1,830 ft.
Ohio Oil Co. No. 1 Schwab, SE SW SE sec. 9-24-10. Viola 2,763-66 ft., acd.; P. 155 B.O. and 15% wtr. in 24 hrs.
Dr. Shippey No. 1 Boone, NE NE NW sec. 21-26-12. O.W.D.D.; drlg. 1,825 ft.
Shull Drlg. Co. No. 1 Cannon, NE SE NE sec. 23-25-12. Drlg. 175 ft.

Harper County

Carter Oil Co. et al No. 1 Seihart Est., C SW NW sec. 4-34-8w. Fsg. 4,350 ft.

Harvey County

Harburney Oil Co. No. 1 Schrag, NW NW SE sec. 24-22-3w. Viola 3,695 ft.; Wilcox 3,711 ft.; fsg.

Kearny County

J. L. Murphy No. 1 Campbell, NW NW SW sec. 32-25-35w. Anhy. 1,900 ft.; set 7-in. csg. at 2,780 ft.; 1,500,000 ft. gas.
J. L. Murphy No. 1 Masonic Home, C NW sec. 1-26-36w. R.U.R.

Logan County

W. H. Boucher No. 1 Wright, C SE SE sec. 12-15-35w. T.D. 4,025 ft.; pipe stuck.

Lyon County

Davis & Sory No. 1 Byrd, SW SW SE sec. 32-21-11. R.U.M.
Young et al No. 1-A Murphy, SE NW NE sec. 32-21-11. Fsg. 1,380 ft.

McPherson County

Bradley Bros. No. 1 Barnholt, SW SW SE sec. 30-20-5w. Drlg. 660 ft.
Fred C. Frank et al No. 1 Doles, SE NW NE sec. 12-19-1w. S.D. 600 ft.
Hutchinson O. & G. Co. et al No. 1 Berg, SW SW SE sec. 15-20-3w. Drlg. 2,763 ft.
Wamhoff et al No. 1 Nuse, SE NE SW sec. 18-18-4w. Set 10-in. 110 ft.; W.O.C.

Meade County

Pacific Midwest Co. No. 1 Rexford, NE SE SW sec. 8-30-29w. Abd. loc.

Mitchell County

Geo. Siedhoff et al No. 1 Greiss, SW SW SE sec. 16-8-10w. H.F.W. 2,364 ft.; U.R.

Ness County

Jones & Lane No. 1 Page Milling Co., SE SE NW sec. 36-18-26w. Rig.
Newton Dev. Co. No. 1 Tenny, NW NW SE sec. 19-18-25w. Drlg. 4,005 ft.

Reno County

Atlantic Ref. Co. No. 1 Page, SE NW NW sec. 19-23-7w. Fsg. 3,681 ft.
Foraker et al No. 1 Hiett, SE SW NE sec. 34-24-4w. Sil. 4,010-31 ft. T.D.; water.
Imo O. & G. Co. and others No. 1 Watkins, SE cor. sec. 14-22-7w. Spudded.
Clyde Pulse No. 1 Payne, SW NW SE sec. 4-22-7w. Cong. 3,398 ft.; Chat. 3,426 ft.; H.F.W. 3,440 ft. T.D.; P.B. 4,244 ft.; P. 10 B.O.P.H.
Olson Drlg. Co. et al No 1 Herriman, NW cor. sec 22-24-8w Drlg. 2,590 ft.
Sinclair Prairie Oil Co. No. 1 Natt, NW NW SE sec. 32-26-4w. Bldg. rig.
Westgate-Greenland Oil Co. No. 1 O'Sullivan, SW SW NE sec. 24-23-5. Set 8-in. at 3,385 ft.; R.U.S.T.

Rice County

L. E. Douglass No. 1 Coyne, NE SE SE sec. 24-21-8w. Drlg. 1,725 ft.
Hanna et al No. 1 Brothers, SE SE NW

sec. 25-20-8w. Cong. 3,323 ft.; drlg. 3,500 ft.
John Hanna et al No. 1 Fulton, NW NW NE sec. 24-10-6w. Drlg. 2,265 ft.
T. C. Johnson No. 1 Shubert, SW cor. sec. 9-20-10w. Topeka 2,630-66 ft.; U.R.
Manning & Martin et al No. 1 Mathes, SE SW NE sec. 27-21-8w. Fsg. 3,685 ft.
Fred Phillips et al No. 1 Hubenett, SW NW SW sec. 23-20-6w. Drlg. 625 ft.
Roy Ramsey et al No. 1 Malone, NW NW NE sec. 1-20-10w. Sil. 3,298 ft.; wtr. at 3,300-03 ft., T.D.
Skelly Oil Co. & Ewers Simpson Oil Corp. No. 1 Linville, SW NW NE sec. 2-20-10w. Drlg. 2,574 ft.
C. E. W. Skiles et al No. 1 Helmer, NW NW NE sec. 7-19-18w. R.U.
Union Oil & Refining Co. et al No. 1 Baker, SW SW NE sec. 33-20-6w. Drlg. 950 ft.
W. E. Witt et al No. 1 Fair, NW SE SE sec. 4-22-8w. Drlg. 200 ft.

Rooks County

Basin Oil Co. No. 1 Baxa, NE cor. sec. 23-9-17w. Anhy. 1,437 ft.; drlg. 2,900 ft.
Buckner & Schoff No. 1 McConnel, NE cor. sec. 34-6s-18w. Drlg. 3,155 ft.
Graham et al No. 1 Fike, SW cor. sec. 9-9-17w. T.D. 3,301 ft.
Jones Bros. No. 1 Wiss, NW cor. sec. 8-10-18w. Drlg. 1,492 ft.
Phillips Pet. Co. No. 1 Mainquist, SW SW NW sec. 9-9-17w. S.D. 1,100 ft.
Snowden & McSweeney No. 1 Hindman, C E½ NW sec. 35-7s-17w. H.F.W. 3,180 ft., T.D.; P.B. to 3,118 ft.; swbd. 25 B.O. and 100 B.W., 24 hrs.
Twin Drlg. Co. No. 1 Doughty, SW cor. sec. 15-8-19w. O.W.D.D.; drlg. 3,301 ft.

Rush County

S. A. Murphy et al No. 1 Roth, NW NW SW sec. 21-16-18w. Anhy. 1,159 ft.; drlg. 2,155 ft.

Russell County

Empire O. & R. Co. No. 1 Vaughn, SW cor. sec. 17-14-14w. K.C. 3,015 ft.; T.D. 3,031 ft.; acid.; F. 80 B.O. in 1 hr.; set 8-in., 3,023 ft.
Goldstein and Vernon Oil & Gas Co. No. 1 Steinert Estate, NE SE NW sec. 34-15-15w. Rig.
S. M. Murphy et al No. 1 Deines, SE SE SW sec. 36-15-15w. Drlg. 395 ft.

Saline County

Ryan Consd. No. 1 Wuerth, SW SW NW sec. 28-14-2w. Drlg. 3,125 ft.

Sedgwick County

Cameron et al No. 1 Smith, SW SE SE sec. 13-27-2e. Chat 2,822 ft.; drlg. 2,832 ft.
Empire O. & R. Co. No. 1 Kimel, NW cor. sec. 4-29-2w. Drlg. 2,960 ft.
Roxana Drlg. Co. et al No. 1 Woodman, SW NW SW sec. 26-26-1w. Fsg. 2,094 ft.
E. B. Shawver No. 1 Furman, SW NE SE sec. 24-29-3w. R.U.
E. M. Swearer et al No. 1 Thome, SW SW NW sec. 19-28-1w. Set 7-in. 3,425 ft.; R.U.S.T.

Stafford County

Empire O. & R. Co. No. 1 O'Connor, NE cor. sec. 17-24-15w. Sil. 4,083 ft.; T.D. 4,129 ft.; C.O.
W. P. Faulkner No. 1 Schulz, SE SE NE sec. 6-22-13w. Rig.
J. E. Trigg and Vernon Oil & Gas Co. No. 1 Andrea, SE cor. sec. 4-23-12w. Sil. 3,693 ft.; T.D. 3,731 ft.

Sumner County

Graham et al No. 1 Dawson, NW NW NW sec. 4-33-2w. Drlg. 4,065 ft.
Olson Drlg. Co. et al No. 1 Barr, SE cor. sec. 8-34-2w. Drlg. 4,358 ft.
Orcott & Stewart No. 1 Newton, SE cor. sec. 21-30-2. O.W.W.D.; T.D. 930 ft.; D.&A.
E. B. Shawver et al No. 1 Bryan, C W½ W½ SW sec. 36-30-2w. Drlg. 3,192 ft.
Texas Co. No. 1 Harper, NE SW SE sec. 9-20-3w. Drlg. 1,250 ft.

Trego County

Black Gold Oil Co. No. 1 Allman, C SW SW sec. 34-14-21w. Sil. 3,890 ft.; T.D. 3,990 ft.; D.&A.

Woodson County

Harper et al No. 1 Miller, NW NE SE sec. 10-24-14. Spudded.
Harper et al No. 1 Weidle, SE SE NE sec. 10-24-14. Sil. 2,025 ft.; T.D. 2,046 ft.; D.&A.
Reed et al No. 1 Piper, NW NW SE sec. 19-23-15. Lime, 1,535 ft.; T.D. 1,537 ft.; W.O..C

Texas County

Cabot Carbon Co. No. 1 Castro, C SE sec. 19-3n-17ecm. T.D. 2,570 ft.; set csg.
Missouri Valley Gas Corp. No. 1 well, C sec. 17-6n-14ecm. Rig.

Washita County

John Koberg No. 1 Harms, NW NW NE sec. 6-10-16w. Drk.

SOUTHERN OKLAHOMA

Atoka County

A. J. Sanders No. 3 Redden, SE SW SW sec. 19-1n-15e. T.D. 1,260 ft. (cor.); S.D.

Carter County

Lyle-Wham Dev. Co. No. 1 Jackson, NE SW SW sec. 26-5s-1e. T.D. 881 ft.; S.D.O.

Choctaw County

Cooper & Branstetter No. 1 Bell, C NW NE sec. 29-6s-17. T.D. 1,151 ft. (cor.); S.D.

Comanche County

E. B. Hane No. 1 Duper, NW cor. sec. 21-2n-13w. S.D. 250 ft. for csg.
C. V. Morris No. 1 Young, SE NE SE sec. 24-3n-10w. T.D. 822 ft.; S.D.

Jefferson County

Buffalo Oil Co. No. 1 Crownover, SE SE NW sec. 21-6s-6w. Wtr. sd. 2,230-88 ft.; L. 2,335-36 ft., T.D.; lowering pipe.
Dodson, Wells-Pierson No. 1 Kev, SE SE NW sec. 6-8s-6w. Drlg. 3,183 ft.
Fields et al No. 1 Trout, NE NE SW sec. 5-8s-7w. T.D. 2,260 ft.; D.&A.
Gulf Oil Corp. No. 1 Woodworth, NW NW NE sec. 20-3s-4w. Drk.
Heenan & Coe et al No. 1 Rose, C SW SW sec. 1-5s-5w. Drk.
Massad & Swansberger No. 1 Barrett, NE cor. SE SE sec. 14-6s-6w. T.D. 1,538 ft.; S.D. for repairs.

Johnston County

Patton et al No. 1 McCrummens, SW SW NE sec. 16-1s-6e. T.D. 1,155 ft.; S.D.

Love County

Sinclair Prairie Oil Co. No. 1 Stockton, SE SE SW sec. 26-6s-2w. T.D. 8,583 ft.; P.B. 6,927 ft.; fsg. for tubg. at 5,288 ft.

Marshall County

Stuart & Taylor No. 1 Chestnut, NE cor. sec. 23-8s-5e. T.D. 803 ft.; est. 15 to 20 B.O.; to pmp.

Murray County

Power Oil Co. et al No. 1 Lancaster Trust, C SW NE sec. 10-1s-2e. T.D. 3,438 ft.; P.B. to 3,175 ft.; W.O.C.
J. Ben Russell No. 1 fee, SE SE NW SE sec. 9-2s-3e. Drlg. 1,418 ft.

Stephens County

William Angle No. 1 Posey, C NW NW sec. 8-1n-8w. Rng. cor bbl. 5,140 ft.
Carter Oil Co. No. 1 Harley, C NE NE sec. 24-2s-4w. Woodford 4,010 ft.; drlg. 4,209 ft.
H. J. Edwards No. 1 Frederick, SW cor. NE SE NW sec. 31-2n-8w. T.D. 2,754 ft.; rigging mch.
Helmerich & Payne No. 1 Graham, SW SW NE sec. 12-1n-5w. T.D. 5,014 ft.; contract depth; blew in as gasser.
B. F. Lundy No. 1 Calmes, NW SW SE sec. 35-1n-4w. T.D. 2,725 ft.; S.D. for repairs.
Charles Newsom No. 1 Pfile, SW cor. sec. 1-2s-7w. Drk.

Tillman County

D. S. Smith No. 1-A Hamil, NE NW NW sec. 6-5s-15w. T.D. 2,425 ft.; S.D.

OKLAHOMA

Week ending April 3

NORTHERN OKLAHOMA

Beckham County

Carter Oil Co. No. 1 Garrett, NE cor. sec. 11-7n-25w. T.D. 2,226 ft.; D.&A.
Mid-American Oil Co. No. 1-A Biscoe, SW cor. sec. 28-8-22w. T.D. 975 ft.; S.D.

Caddo County

Clyde Becker et al No. 1 Pharris, SE SE NW sec. 24-6-12w. Tools on ground.

Cleveland County

W. R. Hollenbeck No. 1 Norman, NW NW NE sec. 17-9-2w. S.D. for wtr. at 2,815 ft.

Coal County

Ruwoldt & Couch No. 1 McMillan, SW cor. sec. 10-1s-8. T.D. 1,343 ft.; lowering csg.

Creek County

J. E. Crosbie, Inc. & Sinclair Prairie Oil Co. No. 1 Bailey, NE NW NW sec. 28-15-7. Drlg. 3,185 ft.
M. W. Mosier et al No. 1 Holcomb, SE SW NW sec. 19-18-8. S.D. 2,935 ft.
Comail Oil Co. et al No. 1 Hall, SW SW NE sec. 2-15-7. Bart. 3,030 ft.; drlg. 3,211 ft.

Garfield County

Arab Oil Co. No. 1 Harkendorf, NE cor. sec. 34-20-3w. Tonkawa 3,535 ft.; Avant 4,070 ft.; drlg. 5,040 ft.
Ohio Oil Co. No. 1 State, SW cor. sec. 13-23-3w. Rig.

Grady County

Western White Lily Oil Co. No. 1 Stover, SE SW NW sec. 33-3n-7w. T.D. 1,770 ft.; C.O.

Haskell County

Continental Oil Co. No. 1 Anderson, SW SE NE sec. 33-8-20. Bldg. rig.

Harmon County

Penn State Oil Co. No. 1 Cole, C W½ SW NW sec. 21-2n-26w. Drlg. 390 ft.

Hughes County

W. W. Bassett No. 1 Field, C NW SW sec. 11-9-11. Loc. T.A.
Carson Oil Co. No. 1 Lyter, NE NW SW sec. 31-8-12. Wilcox 4,912 ft.; T.D. 4,940 ft.; D.&A.
Mid-Western Prod. Co. No. 1 Hill C SE NW sec. 13-9-9. 22,000,000 ft. gas at 2,884 ft.; dry sand, 2,890-2,904 ft.; T.D. 2,942 ft.; S.D.
C. J. Wrightsman No. 1-A Diamond, NE NE SE sec. 33-9-9. Drlg. 3,790 ft.

Kay County

Fortuna Oil Co. No. 1-A Harris, SW SW NE sec. 14-25-1e. S.D. at 383 ft.

Kiowa County

Argus Pet. Co. No. 1 Osborne, NW cor. NE sec. 9-7-16w. T.D. 1,225 ft.; fsg.
Kiowa Oil Corp. No. 1 Finder, C SW NE sec. 4-6-20w. Machine.

Latimer County

Clark Drlg. Co. et al No. 1 Wilson, C SE SE sec. 15-5-18. Drlg. 3,845 ft.

Logan County

Anthony & Marshall No. 1 Fruin-Eckman, SE SE SW sec. 4-16-1e. C.O. 4,975 ft.
Harry Blackstock No. 1 Prince, SE NE SW sec. 11-17-3w. T.D. 6,482 ft.; D.&A.
Helmerich & Payne et al No. 1 Randall, SW SW NW sec. 24-16-1w. Rig.
Helmerich & Payne et al No. 1 Ruck, C NE SE sec. 9-19-2w. Avant 3,670 ft.; Layton 4,095 ft.; drlg. 4,725 ft.

Murray County

O. O. Owen No. 1 Fryer, NE SE NE sec. 34-1s-3e. Drk.

Muskogee County

A. D. Spears et al No. 1 Robbins, NW cor. sec. 20-15-20. Turkey Mt. sd. 1,677-84 ft.; Arbuckle 1,710 ft.; T.D. 1,811 ft.; D.&A.

Noble County

Lincoln Oil Co. et al No. 1-A Neil, NE cor. sec. 15-23-2w. Drlg. 2,970 ft.

Okfuskee County

Mid-Continent Pet. Corp. No. 1 Gofford, NE NE NW sec. 35-12-7e. Drlg. 665 ft.

Osage County

Bay Oil Corp. No. 1 Osage, NW cor. sec. 35-24-7. Drlg. 870 ft.
Norbla Oil Co. No. 1 Osage, NE NE SW sec. 13-23-6. T.D. 760 ft.; drilled by whipstock and tools fell back in.

Pawnee County

Forest Dev. Corp. No. 1 Markham, SW NE SE sec. 10-21-5e. T.D. 3,185 ft.; D.&A.

Payne County

Bill Riddle No. 1 Van Zandt, NW NW SE sec. 16-18-3e. Cellar and pits.

Pontotoc County

E. H. Moore et al No. 1 Muse, SW NE SE sec. 33-2n-7. T.D. 5,253 ft.; P.B. to 4,570 ft.; acd.; flwd. 452 B.O. gross, 1 hr.; reacidized; waiting.

Pottawatomie County

Champlin Ref. Co. No. 1 Buckler, SE NE NE sec. 7-6-4e. Earlsboro, 3,888 ft.; Mayes 4,125 ft.; drlg. 4,200 ft.
Mid-Continent Pet. Corp. No. 1-A Logan, NE NE SE sec. 31-11-5. Drlg. 3,865 ft.

Pushmataha County

Erle Halliburton et al No. 1 Bagwell, SW NE NE sec. 30-3s-15e. T.D. 1,293 ft.; S.D.

Seminole County

Amerada Pet. Corp. et al No. 1 Fore A, SW cor. sec. 12-9-7. Cromwell 3,400-03 ft.; T.D. 3,408 ft.; D.&A.
J. E. Hall et al No. 1 White, SE NW SE sec. 30-6-8. T.D. 2,610 ft.; P.B. and W.O.C.
J. H. Hudson et al No. 1 Tanyan, SE SE SW sec. 32-10-7. Gil. 3,670 ft.; Cromwell 3,718 ft.; Mayes 4,190 ft.; drlg. 4,250 ft.
Sinclair Prairie Oil Co. No. 1 Rossanna, NW NW SW sec. 28-10-8. Viola 4,123 ft.; T.D. 4,164 ft.; R.U.S.T.

ARKANSAS

Ashley County

Joe Modisette No. 1 Stillions Lbr. Co., C S½ SW NW sec. 18-17-9. Loc.

Clark County

W. M. Martin No. 1 Coke, NW sec. 14-10-20. Cg. 514 ft.
John G. Wooten No. 1 Z. T. Sparkman, sec. 1-11-20. T.D. 563 ft.; D.&A.

Grant County

Wallace & Staples No. 1 W. F. Davis, SE SE NW sec. 23-6-15. Jnkd. first hole; T.D. 2,382 ft. Fsg.

Hempstead County

Birdwell et al No. 1 Duckett, SW NW SW sec. 24-13-24. Drlg. 597 ft.
Root Pet. Co. No. 1 Lucey E. Drake, SE SE NW sec. 24-14s-24w. Drlg. 4,100 ft.
Shephert & Todd et al No. 1 Smith, NW SW SE sec. 11-11-25. T.D. 600 ft.; S.D. fuel.

Lafayette County

Carl B. King Drlg. Co. No. 1 Eben H. Woolcott, NE cor. sec. 36-19-26. Drlg. 4,600 ft.
A. M. Neeley No. 1 Meek, NE NE NW sec. 35-19-25. S.D. 3,159 ft.

Little River County

Joe Strahan No. 1 Dierks, SW SE sec. 21-12-28. Drlg. 2,250 ft.

Miller County

Odell Hinson No. 1 Montana Realty Co., NE NW NW sec. 3-17-28. Fsg. D.S. 2,000 ft.; T.D. 5,235 ft.
E. H. Moore No. 2 Dale, 660 ft. N and W, C sec. 24-15-26. R.U.
E. H. Moore No. 3 Dale, 660 ft. W of No. 7, sec. 24-15-26. Loc.
Nivia Oil Corp. No. 1 M.&P. Bank, NE SE SE sec. 18-15-26. Drlg. 1,215 ft.

Miller County—Rodessa

Allred & Allred No. 1 E. A. Rector, SE W½ W½, sec. 16-20-28. Loc.
Tony DeGrazier No. 1 E. A. Rector, SE sec. 17-20-28, on 2-ac. tr. Loc.
Layton No. 1 Rector, SE cor. 130-ac. tr., sec. 17-20-28. Loc.
McClanahan et al No. 1 W. L. Capps, sec. 11-20-28. R.U.

Nevada County

Benedum & Trees No. 1 Block, NE NE SE sec. 9-14-20. T.D. 5,394 ft.; D.&A.
Benedum & Trees No. 7 Grove, NW SW NW sec. 10-14-20. P.B. to T.D. 1,283 ft.; W.O.C.S.
Benedum & Trees No. 8 Grove, SW SW NW sec. 10-14-20. Comp.; pmp. 118 B. P.D.; T.D. 2,173 ft.
Benedum & Trees No. 9 Grove, NE NE SW sec. 10-14-20. R.U.; W.O.
Benedum & Trees No. 1 Mary Jackson, NE NW NE sec. 9-14-20. T.D. 2,134 ft.; W.O.S.R.
Benedum & Trees No. 2 Mary Jackson, SE NE NE sec. 9-14-20. M.I.R.
Benedum & Trees No. 1 A. R. Mitchell, SE SW SE sec. 4-14-20. R.U.
Berry Asphalt No. 1 W. Haynie, NE NE SW sec. 6-14-20. T.D. 1,193 ft.; W.O.S.R.
Berry Asphalt Co. No. 2 J. Haynie, NE SE SW sec. 6-14-20. Loc.
Berry Asphalt Co. No. 3 W. Haynie, SE NE SW sec. 6-14-20. Drlg. 400 ft.
Hall & Briscoe No. 2 Ritchie, NE NW SE sec. 10-14-20. Cg. 1,261 ft.
A. M. Lacy No. 1 H. C. Bennett, SW SE sec. 24-14s-22w. Drk.
Walter Lowd No. 1 T. S. Grayson, SW SW SE sec. 12-14-20. T.D. 2,385 ft.; S.D.; W.O.
W. E. Stewart No. 1 Mendenhall, cen. SE NW NE sec. 1-14-20. Cg. 2,082 ft.
Steel & Warmack No. 1 Wm. Haynie, SE SE NW sec. 6-14-21. T.D. 1,183 ft.; W.O.S.R.
G. H. Vaughn No. 1 Christopher, SW SW SE sec. 3-14-20. Fsg.; T.D. 3,291 ft.

Ouachita County

J. D. Reynolds No. 2 P. C. Grayson, Lot 4, Blk. 10, Stephens Sur., sec. 21-15-19. Bailing; T.D. 1,508 ft.

Saline County

Duncan & Gibbens No. 1 Williams, NW NE sec. 18-3-15. 10-in. cmtd. 104 ft.

Sevier County

C. J. Benkley No. 1 Luther Tabler, NW NE SE sec. 14-10s-29w. S.D. 50 ft.

Union County

Arkansas Southern Oil No. 1 G. G. Simmons, sec. 15-18-13. 10-in. cmtd. 194 ft.
Dietrich et al No. 1 Aaronson, NE SW NE sec. 3-18-16. Drlg. 2,075 ft.
Lion Oil No. 1 Morgan, sec. 18-18-17. O.W.D.D. (formerly Phillips Pet. Co.); hvy. shows oil on D.S.; 9-in. cmtd. 5,555 ft.; T.D. 5,559 ft.; W.O.C.S.
Marine Oil Co. No. 6-E W. B. Thompson, SW NE NE sec. 10-18-13. Drlg. 100 ft.
Penn-Ark. Corp No. 1 W. N. Raulston, 330 ft. S and E, NW NW SE sec. 12-17-14. T.D. 2,983 ft.; W.O.S.R.
S. H. A. Oil Corp. No. 1 H. D. Warren, NE SW SW sec. 10-17-14. Drlg. out cmt. 3,342 ft. and W.O.S.R.; T.D. 3,342 ft.
Sklar No. 1-A Cordell, NE SE SW sec. 24-17-16. Loc.

LOUISIANA

NORTH LOUISIANA PROVEN

Caddo—Rodessa

Drillers, Inc., No. 1 Glassell-Means, SW NE SE sec. 9-23-15. Drlg. 1,350 ft.
Gulf Oil No. 1 Campbell, C sec. 4-23-16. Drlg. 4,010 ft.
J. Edw. Jones No. 2-B Sharp, NW C sec. 4-23-16. Drlg. 3,820 ft.
J. Edw. Jones No. 4-A Sharp, SE C sec. 4-23-16. Drlg. 3,000 ft.
Lion Oil Rfg. No. 1 Holm, NW SE SE sec. 9-23-15. Drlg. 5,033 ft.
Lyons & Neely No. 1 Noel, SE cor. sec. 8-23-15. T.D. 6,086 ft.; P.B.
Lyons & Neely No. 2 Noel, SW SE SE sec. 8-23-15. Cg. 5,783 ft.
Magnolia Pet. Co. No. 11-A Caddy Lvy. Bd., SW cor. sec. 21-23-16. Sdtrkd. bit; drlg. 4,995 ft.
Marr et al No. 5 Hunter, sec. 13-23-16. O.W.D.D.; cg. 6,690 ft.
R. W. Norton No. 2 L. C. Harden, 585 ft. E. 656 ft. N, SW cor. 56-ac. tr., sec. 20-23-16. Drlg. 2,160 ft.
R. W. Norton No. 1 Payne, C SE SE sec. 27-23-16. Cg. 8,766 ft.
R. W. Norton No. 4 Starke, 1,980 ft. N, 660 ft. E, SW sec. 16-23-16. Drlg. 3,489 ft.
Standard Oil of La. No. 2 Armistead Comm., SE SE SW scec. 4-23-16. T.D. 6,039 ft.; tstg.

Standard Oil Co. No. 1 L. J. Kaempfer, SE sec. 9-23-16. R.U.
Standard Oil Co. No. 1 Sarah Kaempfer, NW NW NE sec. 9-23-16. R.U.
Standard No. 1 W. M. Terry, SE NE SW sec. 9-23-16. Drlg. 4,834 ft.
United Gas No. 6 fee 574, SW NE NW sec. 16-23-16. Loc.
United Gas Co. No. 27 Rodessa O. & L. Co., NE NW sec. 15-23-16. Flw. 26 bbls. 8 hrs.; T.D. 5,993 ft.; comp.
United Gas No. 1 Starke, SE SW sec. 9-23-16. R.U.
United Gas No. 5 Young, NW sec. 27-23-16. Drlg. 6,021 ft.

N. LOUISIANA WILDCATS

Bienville Parish

DeSoto O. & G. Co. No. 1 Ashley, SW SE sec. 15-16-10w. Loc.
Lide & Greer No. 1 Smelley, 220 ft. N, 160 ft. W, SE SW NE sec. 13-16-5. Comp.; gauge 178,000 ft. gas; T.D. 7,200 ft.
Lide & Greer No. 1 W. J. Smelley, SE NW SW sec. 18-16-4w. R.U.
McDowell et al No. 1 Locke, NE cor. sec. 9-15-10. Drlg. 2,741 ft.

Bossier Parish

Arkansas-La. No. 1 Tom Wilson, SW sec. 8-17-11. Cg. 3,982 ft.
Haynes Drlg. Co. No. 1 A. J. Murff, NE SE sec. 35-17-12. Cg. 5,386 ft.
Producers O. & G. Co. No. 1 Hill Est., E½ NE¼ sec. 8-17-11. R.U.
Producers O. & G. No. 1 R. Johnson, NE sec. 5-17-11. R.U.
Tidwell et al No. 1 Natting, sec. 15-22-14. T.D. 2,954 ft.; S.D.
Triangle No. 2 Ross Unit, NW SW NW sec. 23-17-12. 7-in. 5,175 ft.; T.D. 5,180 ft.
United Gas No. 1 Henderson, NE cor. sec. 36-17-12. Drlg. 5,440 ft.
United Gas No. 1-H A. C. Skannal, NE SE sec. 26-17-12. Comp.; flwg. 210 bbls. 21 hrs.; T.D. 5,144 ft.
United Gas No. 1-I Skannal, SW SW sec. 25-17-12. Drlg. 4,616 ft.
United No. 1-A Webb, C sec. 23-17-12. Drlg. 5,788 ft.

Caddo Parish

Bayou State No. 1 Stiles, NE NE SW sec. 22-22-15. Cmtd. 6-in. 1,005 ft.
E. L. Butt and Sam Hill No. 1 Caddo Lvy. Bd., C sec. 8-20-16. Drlg. 935 ft.
W. D. Chew No. 3 Rives, NE sec. 5-20-16. T.D. 946 ft.; W.O.S.R.
W. D. Chew No. 4 U. S. Govn., NW sec. 5-20-16. R.U.
C. C. Chew No. 3 Pender, NW NW SW sec. 11-20-15. Cmtd. 6-in. 2,163 ft.; T.D. 2,202 ft. (cor.).
Custer Oil Co. No. 1 Wemple, N½ NW sec. 14-20-15. S.D. 1,650 ft.; rig rep.
D. K. O. Oil Corp. No. 1 Player, SE NW SE sec. 26-21-15. T.D. 1,405 ft.; prep. set csg.
D. K. O. Oil Corp. No. 1 Tyson, SE NE sec. 17-21-15. 10-in. cmtd. 100 ft.
DeMaggo et al No. 1 Huckaby, SE NE SE sec. 26-22-16. S.D. 2,200 ft.
Gulf Ref. Co. No. 1 E. P. Hatcher, 660 ft. N and E. SW cor. SE¼ sec. 11-17-15. Drlg. 9,195 ft.
W. J. Hunter et al No. 1 Stoer, NW SW NE sec. 10-15-15. 13-in. 455 ft.
F. L. Luckett No. 1 Connell, SW NE sec. 10-20-15. 6-in. cmtd. 2,174 ft.; T.D. 2,203 ft.; prep. to test.
H. E. Philp No. 1 Fuller, NE cor. sec. 26-22-15. T.D. 1,034 ft.; tstg.; tstd. 150 ft. S.W.; 200 ft. oil at 1,032 ft.
Prairie River Synd. No. 1 Hutchinson, SW NW sec. 15-15-12. R.U. to D.D.; old T.D. 7,377 ft.; wsg. to bottom to D.D.
Robson Oil Properties, Inc., No. 1 Cupples, NE sec. 24-16-13 (formerly Falcon Oil Co.). Drlg. 4,960 ft.
Rodgers et al No. 1 Thompson, NW SW SW sec. 11-20-15. P.B. to 2,204 ft.; W. O.C.S.
P. A. Singlust No. 2 Starr-Brown, SE sec. 28-20-16. Cg. S.W. sd.; T.D. 1,820 ft.; W.O.
Stanolind O. & G. No. 118 Dillon, SE sec. 14-21-15. Comp.; pmp. 20 B.P.D.; T.D. 1,675 ft.
Stanolind O. & G. No. 119 Dillon, SE NE sec. 14-21-15. Comp.; pmp. 65 B.P.D.; T.D. 1,675 ft.
Stanolind O. & G. No. 120 Dillon, SE NE sec. 14-21-15. T.D. 1,490 ft.
Stanolind O. & G. Co. No. 121 Dillon, NE SE sec. 14-21-15. Drlg.
Stanolind O. & G. Co. No. 122 Dillon, NW sec. 13-21-15. Loc.
J. J. Thompson No. 1 Gamm, NE SW NW sec. 35-21-15. Tstg. S.W.; S.D.; T.D. 2,225 ft.

Caldwell Parish

Critchett & Woods No. 2 So. Craft, SE NW NE sec. 18-11-3e. S.D. 1,710 ft.

Claiborne Parish

Gulf Ref. No. 1 Eva Bennett, SW sec. 31-21-4. R.U.
Gulf Ref. No. 1 H. E. Patton, SE sec. 36-21-5. Drlg. 440 ft.
Gulf Ref. No. 2 H. E. Patton, 1,650 ft. N and W, SE cor. sec. 36-21-5. Drlg. 600 ft.
Gulf Ref. No. 3 H. E. Patton, SW NE SW sec. 36-21-5. Drlg.
Gulf Ref. No. 4 H. E. Patton, NW NE SW sec. 36-21-5. Drlg.
T. L. James No. 1 Patton Est., C N½ NE SE sec. 36-21-5. Drlg.
T. L. James No. 2 Patton Est., SW NE SW sec. 36-21-5. Drlg.
Lisbon Oil Co. No. 1 J. W. Burgess, NE SE NE sec. 3-20-5w. T.D. 5,614 ft.; W.O.
Love Pet. Co. No. 1 H. E. Patton, SE SW SE sec. 36-21-5. R.U.
Love Pet. Co. No. 3 H. E. Patton, NE SW SE sec. 36-21-5. Drlg.
Lyons & Neely No. 1 H. E. Patton, NE NW SW sec. 36-21-5w. Comp.; flw. 450 B.P.D.; T.D. 5,292 ft.
Lyons & Neely No. 1 Maggie Patton, C W½ NW SW sec. 31-21-4. Drlg.
McMillan et al No. 1-A Maggie Patton, S½ NE SW sec. 31-24-4. Drlg.
Ray P. Oden No. 1 W. H. Patton, SW SE SE sec. 36-21-5w. Comp.; flw. 487 B.P. D.; T.D. 5,373 ft.
Reel Iron Drlg. Co. No. 1 H. E. Patton, S½ SW NE sec. 36-21-5w. T.D. 5,312 ft.; P.B. from 5,368 ft.; flw. 30 B.P.H.; tstg.
Shreveport Oil Corp. No. 1 Edwards, NE sec. 16-20-5w. Loc.
Standard Oil of La. No. 1 Baker, 660 S&E NW sec. 27-19n-7w. Drlg. 5,567 ft.
United Gas et al No. 1 W. Brown, sec. 1-19-6. T.D. 5,984 ft.; showing oil after acid; W.O.
P. W. Woodruff No. 2 H. E. Patton, C N¼ SW NE sec. 31-24-4. Dig pits.

De Soto Parish

Benedum & Trees No. 1 Clifton, NE NW sec. 33-13-12. Drlg. 4,410 ft.
Chamberlin et al No. 1 Lanier, 280 ft. N and E, SW NE sec. 29-11-11. R.U.
Gulf Ref. Co. No. 36-A Jenkins, SE cor. sec. 2-12-12. Comp.; pmp. 7 B.P.D.; T.D. 2,453 ft.
Lee Oil Co. No. 1 Mansfield, SE sec. 13-10-14. Drk.
Peral Oil Co. No. 1 Joyner, SE NW SW sec. 28-11-12. T.A.; will not test; T.D. 3,300 ft.
Rio Rajo Oil Co. No. 7 Prudhomme, SE cor. sec. 20-12-11. 7-in. cmt. 2,663 ft.; T.D. 2,708 ft.
Stillers et al No. 2 Jenkins, 330 ft. S and W, NE SE NW sec. 35-13-12. S.D. 2,503 ft.; fuel.
R. M. Sundby No. 1 A. P. Garland, NW SW sec. 7-14-14. Drlg. 5,400 ft.

Grant Parish

Grantland Prod. Co. No. 1 Swope-Labrat, NE SW sec. 8-9-1e. Comp.; pmp. 30 B. P.D.; T.D. 1,609 ft.
Grantland Prod. Co. No. 2 Swope-Labrat, NE SW SE sec. 18-9-1e. Drlg. 1,600 ft.
Tri State Lse. & Dev. Co. No. 1 Edenborn Est., NE SE SE sec. 13-7-4w. T.D. 3,000 ft.; S.D.

Jackson Parish

G. W. Zeigen No. 5 La. Cen. Lbr. Co., sec. 13-14-2w. T.D. 2,800 ft.; S.D.; rig rep.

Morehouse Parish

So. Carbon Co. No. 3 Miles, NE sec. 36-21-4e. Cmtd. 6-in. 2,345 ft.

Ouachita Parish

H. L. Woods No. 1 Union, NE sec. 17-19-3e. R.U.
H. L. Woods No. 2 Union Power, SE sec. 17-19-3e. Cmt. 6-in. 2,238 ft.
United Gas No. 2 Morris, SE sec. 36-19-3e. Loc.
United Carbon No. 7 Neston, NE cor. sec. 32-19-4e. Cmt. 6-in. 2,187 ft.; W.O.C.S.

Red River Parish

Gulf No. 26 Kennedy, NW sec. 24-13-11. Drlg. 1,719 ft.
Gulf No. 39 E. T. Robinson, NW cor. sec. 25-13-11. Drlg. 2,526 ft.
Perla Oil Co. No. 1 DeLong, 330 ft. S and E, C sec. 23-12-10. Fsg. 2,800 ft.

Richland Parish

Gulf Ref. Co. No. 15 R. R. Rhymes et al, sec. 32-17-6e. Drlg. 9,919 ft.

Sabine Parish

Earl F. Fox No. 1 Blankenship, NE SE NW sec. 13-9-12. S.D. sh.; T.D. 3,412 ft.
Kirk-Green-Way Inc. No. 1 Whitney Corp., NW NE sec. 8-9-13. Drlg. 3,940 ft.
Prod. O. & G. Co. No. 1 Lynch, SW NE SW sec 29-9-13. Pumped off; acid; T.D. 1,608 ft.
W. G. Ray Drlg. Co. No. 3 Looney, NW SE NE sec. 30-9-13. Drlg. 1,531 ft.
Willis & Dowden No. 1 Lynch, SW NE SW sec. 29-9-13. T.D. 1,608 ft.; arg. tst.

Union Parish

Interstate Nat. Gas Co. No. 63 fee, SE sec. 3-21-3e. Cmtd. 6-in. 2,099 ft.
So. Carbon Co. No. 17 Grayling, SW cor. sec. 21-21-4e. R.U.
So. Carbon No. 18 Grayling, SE cor. sec. 20-21-4e. Loc.
H. L. Woods No. 2-B Frost Lbr., NW sec. 16-21-3e. Loc.
H. L. Woods No. 3-B Frost Lbr. Co., SE SW sec. 10-21-3e. Loc.

Webster Parish

W. H. Bass Drlg. Co. No. 1 T. Crichton, C NW NW sec. 21-20-9. Drk. and M.I.W.
Magnolia No. 2 D. G. Cox, SW SE NE sec. 22-21-10. Drlg. 3,620 ft.
Ohio Oil Co. No. 1 S. P. D. Coyle, NW SE SW sec. 23-21-10. Drlg. 6,316 ft.
Ohio Oil Co. No 2 R. M. Coyle, SE sec. 22-21-10. Drlg. 5,291 ft.
Ohio No. 1 S. P. D. Coyle and W. Cox, SW SW SE sec. 23-21-10. Drk.
Ohio Oil Co. No. 2 A. H. Gray Acct. No. 2, NW sec. 26-21-10. Drlg. 6,666 ft.
Ohio Oil Co. No. 2 A. J. Hodges, NE NW SW sec. 23-21-10. Drlg. 6,808 ft.
Ohio No. 7-B R. L. Holloway, 586 ft. N, 756 ft. E line, sec. 23-21-10. Drk.
L. R. Skidmore No. 1 Barnett, NE NW SW sec. 29-17-9. Drlg. 3,125 ft.
Standard Oil Co. of La. No. 1 E. Firdecker, 1,320 ft. E, 1,316 ft. S, SW cor. sec. 2-17n-9w. T.D. 7,202 ft.; tstg. gas and dist.
United Gas No. 2 Davis, 660 ft. S and E. NW cor. sec. 23-21-10. Tstg. gas and dist.; T.D. 8,551 ft.
United Gas No. 1 Mixon, SE SW sec. 22-21-10. Comp.; flw. 297 bbls. dist.; T.D. 8,231 ft.
Woodlev Pet. Co. No. 4-B Gray, NE NE sec. 27-21-10. Drlg. 6,580 ft.

SOUTH LOUISIANA FIELDS

Ansela Butte—St. Martin Parish

Y. D. Spell No. 3 Begnaud, sec. 117-9s-5e. Drk.
Stanolind O. & G. Co. No. 1 Patin, sec. 46-9s-5e. 13⅜-in. csg. 1,514 ft.; T.D. 5,430 ft. (cor.); P.B. 2,658 ft.; T.D. 6,147 ft.; D.S. stuck 1,750 ft.; abd.
Stanolind O. & G. Co. No. 2 Paton, sec. 46-9s-5e. Loc.

Bayou Coeotriz—Terrebonne Parish

Shell Pet. Corp. No. 1 Pelican, sec. 35-17s-15e. R.U.

Black Bayou—Cameron Parish

Shell Pet. Corp. No. 37 Watkins, sec. 8-12s-12w. Drlg. sd. 2,027 ft.

Caillou Island—Terrebonne Parish

Texas Co. No. 40 State, sec. 78-23s-20e. T.D. 4,916 ft.; 7⅝-in. csg. 4,863 ft.; no report.

Cankton—St. Landry Parish

Superior Oil Prod. Co. No. 1 Brasseaux, sec. 24-8s-3w. Drlg. sh. 7,959 ft.

Charenton—St. Mary Parish

Pan American Prod. Co. No. 3 Laws Realty Co., sec. 25-13s-9e. Drlg. sh. 7,099 ft.
Pan American Ref. Co. No. 4 Laws Realty Co., sec. 30-13s-10e. Drk.
Pan American Prod. Co. No. 1 South Coast Corp., sec. 30-13s-10e. S.D. 6,934 ft.; high wtr.

Choctaw—Iberville Parish

Standard Oil Co. No. 9 Myrtle Grove, sec. 53-9s-11e. T.D. 3,455 ft.; P.B. 3,160 ft.; to sdtrk.; drlg. sdy. sh. 5,620 ft.

Cameron Meadows—Cameron Parish

Burton Sutton Oil Co. No. 16 Sch. Ld., sec. 16-14s-13w. Set 10¾-in. csg.; T.D. 4,851 ft.; P.B. 3,650 ft.; T.D. 4,245 ft.; tstd. dry gas.
Burton Sutton Oil Co. No. 18 School Ld., sec. 16-14s-13w. Drk.
Magnolia Pet. Co. No. 19 Cameron Meadows, sec. 16-14s-13w. T.D. 4,714 ft.; recvrd. 2,500 ft. of P.L.O. on D.S.T.; 9⅝-in. csg. 4,694 ft.; P.B. 4,708 ft.; blew out, caught fire; bridged; R.U.; 7-in. csg. 4,696 ft.; fsg.

Darrow—Ascension Parish

Humble O. & R. Co. No. 4 Community, sec. 33-2e. Drlg. sh. 7,980 ft.

Four Isle—Terrebonne Parish

Texas Co. No. 8 State. Drlg. sd. and sh. 9,510 ft.

Garden Island—Plaquemines Parish

Texas Co. No. 23 State, sec. 37-23s-33e. 18⅝-in. csg. 541 ft.; top salt 5,933 ft.; T.D. 5,965 ft.; P.B. and sdtrkd.; drlg. sh. 5,158 ft.

Gillis—Calcasieu Parish

Fohs Oil Co. No. 1 First Natl. Bank, sec. 13-9s-8w. Drlg. sh. 5,935 ft.
Texas Co. No. 12 Nickerson, sec. 1-9s-8w. Drlg. sh. 6,503 ft.
Union Sulphur Co. No. 12 Barbe, sec. 1-9s-8w. T.D. 9,101 ft.; blew out; caught fire; cratered; cleaning up after blowout; S.D.
Union Sulphur Co. No. 14 Barbe, sec. 1-9s-8w. Drlg. sh. and L. 5,368 ft.
Union Sulphur Co. No. 7 Castle, sec. 14-9s-8w. Drlg. sdy. sh. 5,297 ft.
Union Sulphur Co. No. 4 Kaufman, sec. 12-9s-8w. Loc.
Union Sulphur Co. No. 12 Powell Lbr. Co., sec. 12-9s-8w. 10¾-in. csg. 1,601 ft.; W. O.C.

Hackberry—Cameron Parish

W. T. Burton No. 1 Kennedy, sec. 22-12s-10w. Drk.
W. T. Burton No. 1 J. J. Roboria, sec. 11-9s-2w. R.U.
W. T. Burton No. 1 Rosella Vincent, sec. 22-12s-10w. T.D. 4,351 ft.; 7-in. csg. 4,297 ft.
Gulf Oil Corp. No. 23 Erwin, sec. 12-12s-10w. Drlg. sh. 4,707 ft.
Independent Oil Co. No. 1 Sanner, sec. 29-12s-10w. T.D. 1,775 ft.; 5-in. csg. 1,775 ft.; swbd. S.W.
Stanolind O. & G. Co. No. 1 J. H. Duhon, sec. 27-12s-10w. Old T.D. 4,627 ft.; drlg. sdtrkd. hole. in sh. 3,663 ft.
Stanolind O. & G. Co. No. 25-B Gulf Land fee, sec. 15-12s-10w. 20-in. csg. 158 ft.; sd. and L. 3,925 ft.
Stanolind O. & G. Co. No. 1 Little, sec. 28-12s-10w. R.U.
Stanolind O. & G. Co. No. 18 School Land, sec. 16-12s-10w. T.D. 5,996 ft.; P.B. and sdtrkd.; drlg. sh. 4,548 ft.
Stanolind O. & G. Co. No. 52 State, sec. 22-12s-10w. Loc.
Sutton Joint Interest No. 1 Ellender, sec. 22-12s-10w. 7-in. csg. 4,853 ft.; W.O.C.
Texas Co. No. 21 State, sec. 12-12s-9w. 10¾-in. csg. 2,126 ft.; W.O.C.

Iowa—Jefferson Davis Parish

Shell Pet. Corp. No. 22 Heyd, sec. 13-9s-7w. T.D. 4,432 ft.; 7-in. csg. 4,408 ft.; I.P. 573 B.P.D.; ¼-in. ck.
Shell Pet. Corp. No. 23 Heyd, sec. 13-9s-7w. Drlg. 259 ft.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 1 Banta, sec. 40-13s-9e. Drk.
Herton Oil Co. No. 2 Barrilleaux, sec. 59-13s-8e. T.D. 6,670 ft.; 7-in. csg. 6,650 ft.
Herton Oil Co. No. 5 Carter, sec. 38-13s-9e. 10¾-in. csg. 1,495 ft.; T.D. 7,073 ft., oil sd.; 7-in. csg. 7,073 ft.; I.P. 400 B. P.D.; 7/32-in. ck.
Herton Oil Co. No. 6 Carter, sec. 38-13s-9e. Drk.
Teche Oil Co. No. 1 LeBourgeois, sec. 59-13s-8e. 10-in. csg. 1,400 ft.; drlg. sh. 5,001 ft.

Jennings—Acadia Parish

W. T. Burton No. 1 Robira, sec. 41-9s-2w. Drlg. sh. 1,210 ft.
A. C. Glassell et al No. 1 J. Trusel, sec. 42-9s-2w. T.D. 7,015 ft.; rng. csg.
Lake City Oil Co. No. 2 Jennings Synd., sec. 46-9s-2w. T.D. 3,990 ft.; D.S. stuck 3,700 ft.; cutting.
T. C. Markly No. 1 Gourney, sec. 42-9s-2w. Old T.D. 4,280 ft.; skidded drk.; drlg. sh. 3,907 ft.
Shell Pet. Corp. No. 2 Community, sec. 40-9s-2w. T.D. 7,185 ft.; 7-in. csg. 7,181 ft.; T.D. 7,735 ft.; 5-in. csg. 7,385 ft.; W.O.C.
Stanolind O. & G. Co. No. 18 Houssiere-Latrielle, sec. 47-9s-2w. 8⅝-in. csg. 5,358 ft.; drlg. sh. 6,475 ft.
Superior Oil Prod. Co. No. 2 Eunice-Crowley, sec. 12-9s-2w. Drlg. sdy. sh. 2,553 ft.
Superior Oil Prod. Co. No. 2 Jennings-Heywood, sec. 41-9s-2w. 11¾-in. csg. 1,465 ft.; drlg. sh. 4,720 ft.
Superior Oil Prod. Co. No. 3 Jennings, sec. 42-9s-2w. Loc.
Superior Oil Prod. Co. No. 2 Leckcit, sec. 42-9s-2w. 7-in. csg. 7,041 ft.; drlg. sh. 7,381 ft.
Superior Oil Prod. Co. No. 3 Wm. Leckert, Loc.

Lafitte—Jefferson Parish

Texas Co. No. 6 Lafitte, sec. 20-17s-24e. T.D. 1,771 ft.; lost returns; moved drlg. barge 135 ft. N of first hole; cg. sd. 9,638 ft.
Texas Co. No. 1 State-Bayou Norman, sec. 28-17s-24e. Drlg. sh. 2,050 ft.

Lake Barre—Terrebonne Parish

Texas Co. No. 37 Lake Barre-State. Drlg. sh. and L. 10,934 ft.; P.B.

Lake Hermitage—Plaquemines Parish

Gulf Oil Corp. No. 6 Lafourche, sec. 11-8s-25e. Drlg. sd. and sh. 6,417 ft.

Leesville—Lafourche Parish

Gulf Oil Corp. No. 1-A City of New Orleans, sec. 35-21s-22e. T.D. 5,831 ft.; hole cleaned; run Schlumberger.
Texas Co. No. 59 L.L.&E., sec. 27-21s-27e. Drlg. sd. 3,769 ft.; no report.
Texas Co. No. 62 Leesville, sec. 29-17s-24e. T.D. 4,015 ft.; 7⅝-in. csg. 4,008 ft.; comp.; no gauge.

Lockport—Cameron Parish

Magnolia Pet. Co. No. 6 Freeberg, sec. 9-10s-9w. Sh. 1,256 ft.

New Iberia—Iberia Parish

Wm. Hellis No. 7 Bernard, sec. 54-12s-7e. T.D. 4,760 ft.; 7-in. csg. 4,694 ft.; comp.; no gauge.
Wm. Hellis No. 4 Bullock & Burke, sec. 25-12s-7e. T.D. 4,505 ft.; P.B. and sdtrk.; T.D. 4,401 ft.; P.B. and sdtrkd.; T.D. 4,548 ft.; 7-in. csg. 3,722 ft.; pulling screen.
Wm. Hellis No. 3 Schwing, sec. 57-12s-7e. Sdy. sh. 3,766 ft.
Texas Co. No. 3 Bryant, sec. 25-12s-7e. R.U.
Texas Co. No. 5-B Hanzen, sec. 54-12s-7e. R.U.

Sorrento—Ascension Parish

Sorrento Oil Co. No. 1 Bernard, sec. 9-19s-14e. S.D. 6,262 ft.
Tri-State Dev. Co. No. 1 Duplessis, sec. 69-10s-2e. Drk.

Starks—Calcasieu Parish

J. R. Turnbull No. 1 Industrial Lbr. Co. sec. 20-9s-12w. S.D. 6,433 ft.

St. Martinsville—St. Martin Parish

Tide Water Oil Co. No. 3 Smedes, sec. 57-11s-6e. R.U.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 840 fee, sec. 29-9s-10w. T.D. 3,740 ft.; P.B. 3,316 ft.; failed to flow.
Union Sulphur Co. No. 842 fee, sec. 29-9s-10w. T.D. 5,475 ft.; P.B. and sdtrkd.; sh. 3,889 ft.; no report.

Tepetate—Acadia Parish

Continental Oil Co. No. 2-D Homeseekers Dev. Co., sec. 29-7s-2w. R.U.
Continental Oil Co. No. 7-A L. L. Welch, sec. 28-7s-2w. Drlg. sh. 1,516 ft.
Continental Oil Co. No. 9-A Homeseekers Dev. Co., sec. 29-7s-2w. T.D. 8,323 ft.; P.B. to sdtrk. at 2,354 ft.; T.D. 8,315 ft.; I.P. 350 B.P.D.; ¼-in. ck.
Continental Oil Co. No. 4 P. W. Miller, sec. 28-7s-2w. Drk.
Continental Oil Co. No. 1 M. F. Ortego, sec. 30-7s-2w. T.D. 8,323 ft.; I.P. 100 B. P.D.; ⅜-in. ck.

Valentine—Lafourche Parish

Pan American Prod. Co. No. 2-A Harang, sec. 9-17s-20e. 10¾-in. csg. 1,508 ft.; drlg. 5,390 ft.
Pan American Prod. Co. No. 3 Harang, sec. 8-17s-20e. Cg. sd. showing oil 7,502 ft.
Pan American Prod. Co. No. 4 Harang, sec. 8-17s-20e. Cg. sd. showing oil 5,388 ft.

White Castle—Calcasieu Parish

Shell Pet. Corp. No. 4 Shingle, sec. 12-11s-12e. T.D. 8,903 ft.; P.B. 8,717 ft.; drill pipe stuck; fsg.

S. LOUISIANA WILDCATS

Acadia Parish

H. E. Dalton No. 1 Setting, sec. 17-7s-1w. T.D. 5,426 ft.; fsg.
Humble O. & R. Co. No. 1 Nordyke, sec. 23. 9⅝-in. csg. 6,843 ft.; cg. sh. 9,707 ft.

Allen Parish

Humble O. & R. Co. No. 3 Bel, located in cratered hole, sec. 26-6s-7w. 10¾-in.

csg. 165 ft.; T.D. 2,870 ft.; 7-in. csg. 2,766 ft.; shot well; failed to stop flwg. S.W.; S.D.

Avoyelles Parish

Coastal Minerals No. 1 Purdy-Hess, sec. 25-2n-3e. Drk.; S.D.; high wtr.
George Conover No. 1 Purdy-Hess, sec. 36-2n-3e. Drk.
Frost Oil Co. No. 1 Hines Lumber Co., sec. 3-3n-4e. Drk.

Calcasieu Parish

D. D. Oil Co. No. 1 Lutcher Moore, sec. 11-8s-13w. T.D. 8,398 ft.; tried to blow out; D.S. stuck; cutting and pulling stuck drill pipe.

Cameron Parish

Magnolia Pet. Co. No. 1-A Dobbortine, sec. 9-15s-14w. 8⅝-in. csg. 617 ft.; drlg. sh. 2,808 ft.
Pure Oil Co. No. 1 Mallard Bay, sec. 22-13s-3w. 18⅝-in. csg. 1,499 ft.; 9⅝-in. csg. 7,906 ft.; T.D. 10,146 ft.; drill stem stuck; P.B. 6,923 ft.; perf. csg. 5,763-68 ft.; abd.
Southern Sulphur Co. No. 2 State, sec. 29-15s-10w. Drlg. sh. 2,350 ft.
Union Sulphur Co. No. 1 J. O. Hebert, sec. 18-12s-8w. T.D. 7,040 ft.; showing oil; rng. Schlumberger.

East Baton Rouge Parish

Cavalier Oil Co. No. 1 Vingnes, sec. 40-8s-2e. T.D. 6,690 ft.; D.S. stuck.

Evangeline Parish

Belle Chenney Springs Oil Co. No. 1 Belle Springs Land Dev. Co., sec. 10-2s-1w. T.D. 2,214 ft.; pulled drk. in.
Continental Oil Co. No. 1 Pardee Lbr. Co., sec. 18-4s-1w. Drlg. sd. 6,440 ft.

East Feliciana Parish

East Feliciana Oil No. 1 West & Budding, sec. 37-1s-1w. Spudded 15 ft. and S.D.

Iberia Parish

Jefferson Lake Oil Co. No. 414 State Lake Pigneur, Twp. 12s-5e. Top salt 990 ft.; set 10¾-in. csg. 5,095 ft.; top oil sd. 6,915 ft.; 7-in. csg. 6,930 ft.; perf. csg. 6,930-40 ft.; swbg. small amt. oil and S.W.

Jefferson Parish

Louisiana Crusader Oil Corp. No. 1 Langley, sec. 36-7s-5w. R.U.
Triangle Oil Co. No. 1 Conroe, sec. 125-12s-11e. T.D. 2,461 ft.; drill stem stuck.

Jefferson Davis Parish

Shell Pet. Corp. No. 1 Joe Sturdivant, sec. 25-10s-4w. 10¾-in. csg. 2,616 ft.; 7-in. csg. 8,630 ft.; tstd. S.W. 8,570-90 ft.
Stanolind O. & G. Co. No. 1 Calcasieu Natl. Bank, sec. 28-7s-3w. T.D. 9,139 ft.; blew out, hole bridged; cutting and pulling stuck D.S.; csg. parted around 1,400 ft.
Stanolind O. & G. Co. No. 1 United Life Accident Co., sec. 16-11s-5w. 13⅜-in. csg. 2,142 ft.; drlg. sh. 7,897 ft.

Lafourche Parish

Fohs Oil Co. No. 1 State Lake, sec. 65-17s-19e. Drlg. sh. 4,901 ft.
Wm. Hellis No. 1 City of New Orleans, sec. 19-23s-23e. Sd. showing oil 7,333 ft.; rng. Schlumberger.

Livingston Parish

Coastline Oil Co. No. 1 Addison Trust Co., sec. 7-7s-3e. Drk.

Plaquemines Parish

Gulf Oil Corp. No. 1 Bay-Adams, sec. 25-32s-19. T.D. 4,079 ft.; rmg.

Rapides Parish

C. L. Decker No. 1 Lee Lbr. Co., sec. 21-5n-3e. Loc.
R. D. Webb No. 1 A. M. Brasher, sec. 22-4n-2w. Drlg. sh. 3,958 ft.

St. Bernard Parish

Gulf Oil Corp. No. 1 Lake Lery, sec. 28-14s-14e. Drlg. sd. 5,676 ft.
Southern Sulphur Co. No. 2 State Lake Borgne, sec. 38-14s-15e. 13⅜-in. csg. 303 ft.; drlg. sh. 3,010 ft.

St. Charles Parish

Amerada Pet. Corp. and La. Ld. & Expl. Co. No. 1 State, sec. 13-15s-20e. R.U.

St. Landry Parish

Shell Pet. Corp. No. 1 Boagni, sec. 48-8s-4e. 10¾-in. csg. 2,521 ft.; drlg. sh. 5,837 ft.

St. Martin Parish

Texas Co. No. 9 St. Martin, sec. 21-8s-7e. 18⅝-in. csg. 106 ft.; top salt 8,848 ft.; T.D. 8,885 ft.
Texas Co. No. 3 State, sec. 14-10s-9e. 18-in. csg. 101 ft.; drlg. wtr. sd. 5,568 ft.

St. Mary Parish

Geo. E. Lilly et al No. 1 Martin, sec. 32-9s-7e. Loc.
Texas Co. No. 1 Horse Shoe Bayou, sec. 40-17s-9e. T.D. 10,975 ft.; 7⅝-in. csg. cmtd. on bottom; fsg. for instrument.
Texas Co. No. 1 State-Bateman Lake, sec. 21-16s-12e. Drlg. sh. 7,031 ft.

Terrebonne Parish

Humble O. & R. Co. No. 1 H. J. Ellender, sec. 23-19s-19e. 9⅝-in. csg. 8,735 ft.; drlg. sh. 11,384 ft.

West Feliciana Parish

Cavalier Oil Co. No. 1 C. W. Mackie, sec. 59-3s-2w. T.D. 4,529 ft.; fsg.

TEXAS

Week ending April 3

GULF COAST FIELDS

Raccoon Bend—Austin County

Humble O. & R. Co. No. 7-X Ditmar, Wm. Harvey Sur. Abd. 4,202 ft.
Humble O. & R. Co. No. 3-X A. T. McCasland, W. C. White Sur. T.D. 3,123 ft.; 7-in. csg. 3,081 ft.; comp.; no gauge.
Humble O. & R. Co. No. 12 A. L. McCasland, W. C. White Sur. R.U.
Humble O. & R. Co. No. 15 L. R. Sherwood, W. C. White Sur. Drlg. 3,812 ft.
Humble O. & R. Co. No. 19 Thompson, W. C. White Sur. Drlg. sh. and L. 4,710 ft.

Hastings—Brazoria County

Coastwide Pet. Co. No. 2 Cecil Brown, B. B.B.&C. Sur., Lot 1. T.D. 6,080 ft.; 7-in. csg. 5,995 ft.; I.P. 650 B.P.D.;; ¼-in. ck.
Frost, Lowery & Goldston No. 1 Cecil Brown, center Lot 12, B.B.B.&C. Sur. Drlg. 2,780 ft.; no report.
Humble O. & R. Co. No. 1 J. T. Baker, Lot 13, B.B.B.&C. Sur. Drlg. sh. 5,937 ft.
Humble O. & R. Co. No. 9-A Brown, Wm. Snyder Sur. Drlg. sh. 6,080 ft.
Humble O. & R. Co. No. 1 H. F. Johnson, Lot 19, B.B.B.&C. Sur. T.D. 6,100 ft.; W.O.C.
Navarro Oil Co. No. 2 Callahan, Lot 5, H.T.&B. Sur. No. 29. Loc.
Navarro Oil Co. No. 1 Callahan, Lot 6, H.T.&B. Sur. No. 29. T.D. 6,100 ft.; 7-in. csg. 5,711 ft.
Albert Plummer No. 1 A. W. Brown, C Lot 74, Perry & Austin Sur. Drlg. sh. 4,536 ft.
Stanolind O. & G. Co. No. 3-A Avitts, H.T.&B. Sur. No. 29. Loc.
Stanolind O. & G. Co. No. 2 Frank M. Berger, H.T.&B. Sur. No. 37. Bldg. drk.
Stanolind O. & G. Co. No. 2 Blount, H.T.& B. Sur. No. 29. 10¾-in. csg. 1,664 ft.; T.D. 6,080 ft.; 7-in. csg. 5,995 ft.; I.P. 529 B.P.D.; ¼-in. ck.
Stanolind O. & G. Co. No. 3 C. H. Blount, B. T. Masterson Sur. Drlg. sd. 1,269 ft.
Stanolind O. & G. Co. No. 9 Drake, H.T.& B. Sur. No. 36. 16-in. csg. 90 ft.; W.O.C.
Stanolind O. & G. Co. No. 2 Long, H.T.&B. Sur. No. 29. T.D. 6,080 ft.; 7-in. csg. 5,858 ft.; I.P. 433 B.P.H.; ¼-in. ck.
Stanolind O. & G. Co. No. 1 A. C. McKibben, H.T.&B. Sur. No. 29. Drlg. sd. 5,943 ft.
Stanolind O. & G. Co. No. 2 Steve Paul, A. C.H.&B. Sur. No. 2. Drlg. sd. 3,138 ft.
Stanolind O. & G. Co. No. 3 Steve Paul, A. C.H.&B. Sur. R.U.
Stanolind O. & G. Co. No. 3 Surface, B. B.B.&C. Sur. 10¾-in. csg. 1,660 ft.; T.D. 6,080 ft.; 7-in. csg. 6,019 ft.; I.P. 611 B. P.D.; ¼-in. ck.
Stanolind O. & G. Co. No. 8 Williams, A. C.H.&B. Sur. No. 1. T.D. 6,080 ft.; 7-in. csg. 6,012 ft.

Lockridge—Brazoria County

Gulf Oil Corp. No. 1 Fred Reiss, J. W. Hall Sur. T.D. 8,164 ft.; rng. 7,000 ft. of 9⅝-in. csg.; P.B. to 2,400 ft.; sdtrkd.; 9⅝-in. csg. 5,000 ft.; drlg. sh. 6,937 ft.
Gulf Oil Corp. No. 1 Carrie Baker, J. W. Hall Sur. No. 68. 7-in. csg. 6,348 ft.; T.D. 6,368 ft.; perf. csg.
Shell Pet. Corp. No. 2 Ramsey State farm, J. W. Hall Sur. No. 68. 7-in. csg. 6,350 ft.; T.D. 6,390 ft.; P.B. 6,371 ft.; I.P. 577 B.P.D.; ¼-in. ck.
Gulf Oil Corp. No. 1-A G. L. Wood et al, Thomas Alsberry Sur. No. 4. Abst. No. 2. 13⅜-in. csg. 1,431 ft.; drlg. sh. 3,963 ft.
Gulf Oil Corp. No. 3 Wilkes Smith, J. W. Hall Sur. R.U.

Manvel—Brazoria County

Allhands and Davis No. 1 Lambert, E. Little Sur. Cg. 3,130 ft.
Burton Drilling Co. No. 1 J. Kroll, center Lot 101, A.C.H.&B. Sur. No. 92. R.U.
L. C. McBride-San Jacinto Oil Co. No. 1 F. E. Whites, E. Little Sur. Drlg. sh. 2,645 ft.
R. Olsen No. 2 Nichols, H. N. Little Sur. R.U.
E. A. Stone No. 1 Nichols, E. Little Sur. Drk.
Texas Co. No. 24 Houston Oil Field Assn., Lot 16, A.C.H.&B. Sur. Drlg. sd. and sh. 5,052 ft.
Texas Co. No. 1-B O. L. Rash, T. Spraggins Sur. Abd. 7,079 ft.

Old Ocean—Brazoria County

Harrison and Abercrombie No. 4 Bernard River Ld. and Development Co., Charles Breen Sur. R.U.

West Columbia—Brazoria County

Texas Co. No. 15 Abrams, Geo. Tenille Lge. Sur. 10-in. csg. 1,156 ft.; drlg. salt 5,826 ft.; salt 5,275 ft.

Hoyser—Calhoun County

Humble O. & R. Co. No. 5 E. H. Welder, J. M. Rios Sur. T.D. 5,486 ft.; comp.; no gauge.
Humble O. & R. Co. and Plymouth Oil Co. No. 12-B P. H. Welder, A. Sisneros Sur. T.D. 5,495 ft.; tstg.
Portilla Drlg. Co. No. 12-C P. H. Welder, A. Sisneros Sur. T.D. 5,485 ft.; tstg.
Portilla Drlg. Co. No. 13-C P. H. Welder, A. Sisneros Sur. Drlg. sh. 5,027 ft.

Anahuac—Chambers County

Gulf Oil Corp. No. 2 Pommer, sec. 40, H. &T.C. Sur. R.U.
Gulf Oil Corp. No. 7 Knowles, W. T. Knowles Sur. Drlg. sdy. sh. 7,000 ft.
Gulf Oil Corp. No. 4 G. C. Wilcox, W. T. Knowles Sur. 10¾-in. csg. 2,020 ft.; T.D. 7,080 ft.; 7-in. csg. 7,040 ft.
Gulf Oil Corp. No. 6 Wilcox, sec. 48, H. &T.C. Sur. Bldg. drk.
Humble O. & R. Co. No. 12-B White, J. McGahey Sur. T.D. 7,106 ft.; 5½-in. csg. 7,080 ft.; I.P. 2 bbls. dist. per hr.; ¼-in. ck.
Humble O. & R. Co. No. 1 E. T. Drought, H.&T.C. Sur., sec. 46. T.D. 7,107 ft.; making D.S.T.
Humble O. & R. Co. No. 11 Gripon, H.&T. C. Sur., sec. 51. T.D. 7,115 ft.; tstg.
Humble O. & R. Co. No. 12 Gripon, H.& T.C. Sur. No. 51. Drk.
Humble O. & R. Co. No. 7 G. C. Johnson, sec. 47, H.&T.C. Sur. Bldg. drk.
Humble O. & R. Co. No. 10 Max Engles, sec. 50, H.&T.C. Sur. Loc.
Humble O. & R. Co. No. 26 Middleton, H. &T.C. Sur., sec. 62. T.D. 7,135 ft.; cg. oil sd. 9,113-26 ft.
Humble O. & R. Co. No. 13-B White, J. McGahey Sur. Drk.
Sun Oil Co. No. 24 White, J. McGahey Sur. T.D. 7,128 ft.; 7-in. csg. 7,109 ft.; I.P. 174 bbls. in 24 hrs.; ¾-in. ck.

Barbers Hill—Chambers County

Superior O. & G. Co. No. 3 G. W. Baker, H. Griffith Sur. Drlg. gbo. 600 ft.
A. Weber et al No. 1 Zappe, Wm. Bloodgood Sur. Drlg. sh. 1,600 ft.

Cotton Lake—Chambers County

Salt Dome Oil Co. No. 1-C Lawrence, S. Barrow Sur. T.D. 6,503 ft.; 7-in. csg. 6,498 ft.; I.P. 636 B.P.D.; ¼-in. ck.; T.P. 1,500 lbs.; C.P. 750 lbs.
Salt Dome Oil Co. No. 1-D Lawrence, 932 ft. W of No. 1-C, S. Barrow Sur. R.U.

Seabreeze—Chambers County

Sun Oil Co. No. 1-A Broussard-Hebert, T. &N.O. Sur. No. 127. Loc.
Sun Oil Co. No. 1-B White, Wm. Mays Sur. 18⅜-in. csg. 1,226 ft.; T.D. 9,637 ft.; flwd. gas and S.W.; killed to drill ahead.

Turtle Bay—Chambers County

Stanolind O. & G. Co. No. 1 Silva-Shadrack, Burney Sur. Bldg. drk.

Big Creek—Fort Bend County

Gulf Oil Corp. No. 75 T. W. Davis, M. Young Sur. Drlg. 7,790 ft.

Blue Ridge—Fort Bend County

Telshaw-Reese and Echelson No. 1 Blakely, E. Drew Sur. R.U.

Boling—Fort Bend County

Crosby et al No. 1 H. R. Farmer, J. Scott Sur. Drlg. sd. and sh. 3,924 ft.
John Deering No. 1 J. M. Moore, Charles Bettner Sur. Drlg. sh. and L. 2,755 ft.
Mack Hank Oil Co. No. 3-B J. R. Farmer, J. Scott Sur. T.D. 4,877 ft.; 7-in. csg. 4,855 ft.
Mack Hank Oil Co. No. 4-C E. C. Farmer, J. Scott Sur. T.D. 4,859 ft.; 7-in. csg. 4,814 ft.; I.P. 526 B.P.D.; ¼-in. ck.
Mack Hank Oil Co. No. 5-C E. C. Farmer, J. Scott Sur. Loc.

Orchard—Fort Bend County

Gulf Oil Corp. No. 52 Moore, James Frazier Sur. Drk.
Gulf Oil Corp. No. 49 J. M. Moore, Germain Immg. No. 8, 13⅜-in. csg 2,522 ft.; drlg. sh. 6,884 ft.

High Island—Galveston County

Stanolind O. & G. Co. No. 1-B Cade, H. Denman Sur. Drlg. sdy. sh. 5,354 ft.
Stanolind O. & G. Co. No. 61 Cade, N. Fitzsimmons Sur. Drlg. sd. and L. 3,610 ft.
Stanolind O. & G. Co. No. 15-A Smith, M. Dunman Sur. Bldg. road.

Dickinson—Galveston County

Atlantic O. & Ref. Co. No. 1 G. O. Anderson, P. G. Merritt Sur. Oil sd. 8,066-92 ft.; T.D. 8,098 ft.; 7-in. csg. 8,098 ft.; W.O.C.
Coast Pet. Corp. No. 6 Maco Stewart, W. K. Wilson Sur. Drlg. sh. 1,920 ft.
Diadem Oil Corp. of Texas No. 2 W. J. Way, F. P. Epperson Sur. Drlg. sdy. sh. 8,110 ft.
Diadem Oil Corp. of Texas No. 1 Pauline Frederick. Loc.
Humble O. & R. Co. No. 1-C Bayou Development Co., J. Sellers Sur. T.D. 8,039 ft.; 7-in. csg. 8,026 ft.; I.P. 582 B.P.D.; ¼-in. ck.
Humble O. & R. Co. No. 15-A Maco Stewart, W. K. Wilson Sur. Loc.
Humble O. & R. Co. No. 16-A Maco Stewart, W. K. Wilson Sur. T.D. 8,850 ft.; I.P. 38 B.P.H.; ¼-in. ck.
Humble O. & R. Co. No. 17-A Stewart, J. Seller Sur. Drlg. sh. 2,600 ft.
Humble O. & R. Co. No. 18-A Stewart, W. K. Wilson Sur. R.U.
W. E. McKinney et al No. 3-A Galveston-Houston Elec. R.R., W. K. Wilson Sur. Loc.
Pure Oil Co. No. 4 J. W. Shelor, G. W. Banks Sur. T.D. 8,108 ft.; 5½-in. csg 8,108 ft.; perf. csg. 8,044-50 ft.; I.P. 322 B.P.D.; ¼-in. ck.
Pure Oil Co. No. 1 Sealy Hutchings, P. G. Merrett Sur. 10¾-in. csg. 1,826 ft.; T.D. 8,111 ft.; 5½-in. csg. 8,111 ft.; perf. csg. 8,058-61 ft.; flwg. gas, small amt. of oil and wash wtr.
Sinclair Prairie Oil Co. No. 1 W. Weems, W. K. Wilson Sur. Loc.
Stanolind O. & G. Co. No. 1 Dameanl, W. K. Wilson Sur. Cg. sd. 8,461 ft.
Stanolind O. & G. Co. No. 7 State, 13⅜-in. csg. 2,013 ft.; W.O.C.

Greens Lake—Galveston County

Sun Oil Co. No. 8 Hughes, W. C. M. Baker Sur. Drlg. rock 2,210 ft.

Silsbee—Hardin County

Republic Prod. Co.-Houston Oil Co. No. 9 Brooks, G. W. Brooks Sur. R.U.
Republic Prod. Co.-Houston Oil Co. No. 10 Brooks, G. W. Brooks Sur. Drlg. sh. 6,632 ft.
Republic Prod. Co.-Houston Oil Co. No. 11 Brooks, G. W. Brooks Sur. 10¾-in. csg. 1,441 ft.; drlg. sdy. L. 6,084 ft.

Clinton—Harris County

Stanolind O. & G. Co. No. 1 D. A. Oates, C. Martinez Sur., Abst. 543; 9⅝-in. csg. 6 771 ft.; drlg. sdy. sh. 8,067 ft.; top gas sd. 8,063 ft.; cg. sh. and sd. 8,501 ft.

Humble—Harris County

Texas Co. No. 3 Carroll, J. B. Stevenson Sur. T.D. 2,999 ft.; I.P. 303 bbls. in 24 hrs.; ¼-in. ck.

Mykawa—Harris County

West Prod. Co. No. 10 W. H. Irwin, W. B. Walker Sur. Drk.

Pierce Junction—Harris County

Hamil & Smith No. 3 Saunders, B.B.B.& C. Sur. Top salt 3,981 ft.; T.D. 4,000 ft.; csg. collapsed.

South Houston—Harris County

Stanolind O. & G. Co. No. 2 Dist. No. 8 Drlg. clay and sd. 145 ft.
Stanolind O. & G. Co. No. 6 First Natl. Bank, Callahan and Vince Sur. T.D. 4,045 ft.; P.B. 2,380 ft.; T.D. 4,035 ft.; 5½-in. csg. 4,020 ft.
Stanolind O. & G. Co. No. 2 Green, H.T. &B. Sur. No. 6. 9⅝-in. csg. 1,429 ft.; T.D. 4,023 ft.; 5½-in. csg. 4,001 ft.
Stanolind O. & G. Co. No. 5 Holland and Price, H.T.&B. Sur. No. 6. 13⅜-in. csg. 90 ft.; drlg. L. 3,915 ft.

Tomball—Harris County

Humble O. & R. Co. No. 2 Hagler, Chas. Maruott Sur. Drlg. sh. 700 ft.
Humble O. & R. Co. No. 1 W. J. Murphy, J. Pruitt Sur. T.D. 5,561 ft.; I.P. 458 B.P.D.; ¼-in. ck.
Humble O. & R. Co. No. 1 L. T. Norvell, P. Pruitt Sur. R.U.
Humble O. & R. Co. No. 1 Tomball Townsite Unit No. 8, Wm. Hurd Sur. Drlg. sh. and L. 4,440 ft.
Humble O. & R. Co. No. 1 Tomball Townsite, Unit 14, R. Hubbard Sur. T.D. 5,584 ft.; 5½-in. csg. 5,577 ft.; I.P. 19½ B.P.H.; ¼-in. ck.
Lourey Drlg. Co. No. 2 Hillegeist, J. House Sur. Drlg. 1,457 ft.
Shell Pet. Corp. No. 2 Beeler, J. Pruitt Sur. T.D. 5,573 ft.; 5-in. csg. 5,554 ft.; I.P. 627 B.P.D.; ¼-in. ck.; T.P. 725 lbs.

Mauritz—Jackson County

Shell Pet. Corp. No. 1-B Mauritz. T.D. 5,703 ft.; 5-in. csg. 5,693 ft.; P.B. 5,651 ft. perf. csg. 5,645-47 ft.; rec. 900 ft. of P.L.O. on D.S.T.; run screen and lnr.

Amelia—Jefferson County

Humble O. & R. Co. No. 1 A. Busceine, C. Blk. 3, C. Williams Sur. R.U.
Humble O. & R. Co. No. 1-G Ephlin, Blk. E, Lot 4, Mayfair Subd., C. Williams Sur. Drk.
Humble O. & R. Co. No. 1 Freeman, C. Williams Sur. Cg. gas sd. 6,756 ft.
Humble O. & R. Co. No. 1 Gist, C. Williams Sur. T.D. 6,780 ft.; tstg.
Humble O. & R. Co. No. 1 Industrial Investment Co., Unit 1-B, C. Williams Sur. 13⅜-in. csg. 215 ft.; T.D. 6,780 ft.; 5½-in. csg. 6,780 ft.; perf. csg. 6,775-78 ft.; I.P. 139 B.P.D.; ¼-in. ck.
Humble O. & R. Co. No. 2 Industrial Invest Co., C. Williams Sur. R.U.
Humble O. & R. Co. No. 1 J. E. LaGrange, Lot 33, Blk. E, C. Williams Sur. Top sd. 6,760 ft.; T.D. 6,780 ft.; 5½-in. csg. 6,780 ft.; perf. csg. 6,774-78 ft.; flwd. 105 bbls.; killed to W.O.
Humble O. & R. Co. No. 1-B M. I. Lefler, Unit 19, Blk. E, C. Williams Sur. Drlg. sh. 6,525 ft.
Humble O. & R. Co. No. 2 M. L. Lefler, C. Williams Sur. Drlg. sh. 5,300 ft.
Humble O. & R. Co. No. 2-B M. I. Lefler, Lot D, C. Williams Sur. Loc.
Humble O. & R. Co. No. 1 A. L. Nolan, Blk. E, Williams Sur. Loc.
Humble O. & R. Co. No. 3 J. H. Phelan, C. Williams Sur. Loc.
Humble O. & R. Co. No. 1 G. Sims, C. Williams Sur. Drlg. sh. 3,500 ft.
Humble O. & R. Co. No. 4 Tyrell, A. Savery Sur. T.D. 6,780 ft.; 5½-in. csg. 6,780 ft.; I.P. 10 B.P.H.; reworking.
Glenn H. McCarthy No. 4 Long, H. Williams Sur. Drlg. 200 ft.
Stanolind O. & G. Co. No. 1 J. W. Hall, H. Williams Sur. Drlg. sh. 1,670 ft.
Stanolind O. & G. Co. No. 2 Sargl, H. Williams Sur. R.U.

Big Hill—Jefferson County

Stanolind O. & G. Co. No. 2 M. E. Fitzhugh, Wm. McFaddin Sur. R.U.

Fannett—Jefferson County

Gulf Oil Corp. No. 1 Junker, W. A. Smith Sur. T.D. 6,044 ft.; 9⅝-in. csg. 6,009 ft.

LaBelle—Jefferson County

Sun Oil Co. No. 1 John Ward, 933 ft. S of No. 2 Broussard, Wm. Burton Sur. 18⅝-in. csg. 109 ft.; drlg. sh. and L. 3,722 ft.

Nome—Jefferson County

Shell Pet. Corp. No. 5 Carpenter, M Peveto Sur. T.D. 6,145 ft.; tstd. S.W. on D.S.T.; 5-in. csg. 6,075 ft.; perf. csg. 6,015-32 ft.; comp. for gas well through 9/64-in. ck.
Shell Pet. Corp. No. 5 Paggi. Kirby Sur. T.D. 6,050 ft.; 5-in. csg. 6,011 ft.
Sun Oil Co. No. 1 J. E. Burrows, J. Blair Sur. R.U.
Sun Oil Co. No. 1 Long, J. Blair Sur.

O.W.D.D.; T.D. 9,045 ft.; cutting and P.B. 5,660 ft.; to sdtrk.; T.D. 6,050 ft.; 5¾-in. csg. 6,000 ft.; comp. for gas well through ⅛-in. ck.; T.P. 1,275 lbs.; C.P. 1,335 lbs.

Sun Oil Co. No. 6 Paggi. J. W. Kirby and W. H. Aldridge Sur. R.U.

Sun Oil Co. No. 7 Paggi, J. W. Kirby and W. H. Aldridge Sur. Loc.

Sun Oil Co. No. 1 A. J. Mouboules, J. Blair Sur. 10¾-in. csg. 1,062 ft.; drlg. sh. 8,631 ft.

Cleveland—Liberty County

Gulf Oil Corp. No. 17-C Kirby, J. Pleasants Sur. R.U.

Hankamer—Liberty County

Gulf Oil Corp. No. 2-A Weiser, George Stengler Sur. Drlg. sh. 4,820 ft.

Hull—Liberty County

Bishop Oil Co. No. 1 C. R. Wilson, J. Devore Sur. Oil sd. 780-88 ft.

D.&L. Production Co. No. 4 Mecon and Layton, J. Devore Sur. T.D. 4,960 ft.; 7-in. csg. 4,411 ft.

Eclipse Oil Co. No. 1 Barrow. T.D. 5,014 ft.; S.D.

Gulf Oil Corp. No. 23 Baldwin, J. Devore League Sur. Oil sd. 4,975-5,014 ft.; T.D. 5,016 ft.

Republic Prod. Co. No. 162 Dolbear, J. Devore Sur. T.D. 2,499 ft.; 5-in. csg. 2,411 ft.

Texas Co. No. 6 Hannah, J. Devore Sur. Drlg. sh. 1,215 ft.

Esperson—Liberty County

General Crude Oil Co. No. 26 Moores Bluff Loc.

Bay City—Matagorda County

Hamman Expl. Co. No. 1 J. H. Crocker, E. Hall Sur. 13⅜-in. csg. 1,260 ft.; 9⅝-in. csg. cmtd. at 6,500 ft.; T.D. 9,575 ft.; 7-in. csg. 9,575 ft.; perf. csg. 8,806-19 ft., 8,832-36 ft., 8,944-49 ft.; tstd. S.W.; set cmt. retainer at 8,200 ft.; perf. csg. 8,190-94 ft.; flwd. 650 bbls. flowing 470 bbls. of fluid per day through ¼-in. ck., 4 to 8% S.W.; W.P. 300 lbs.

Hawkinsville—Matagarda County

Sun Oil Co. No. 2 Craig, T. Williams Sur. Top salt 796 ft.; base salt 2,099 ft.; 18⅝-in. csg. 2,174 ft.; 13⅜-in. csg. 3,700 ft.; drlg. sd. and sh. 4,647 ft.

Markham—Matagarda County

G. G. Hamil, Tr., No. 2 T. E. Hudson, H. Parker Sur. Drlg. sh. 3,112 ft.

Van Vleck—Matagarda County

Skelly Oil Co. No. 2 W. P. Johnson, M. Cummings Sur. Loc.

Royal Oil Co. No. 1 Fine Holub, M. Cummings Sur. Drlg. sh. 5,212 ft.

Skelly Oil Co. No. 2 Rugely, I.&G.N. Sur. No. 8. 10¾-in. csg. 1,399 ft.; cg. sh. 8,197 ft.

Skelly Oil Co. No. 1 First Natl. Bank, I.&G.N. Sur. No. 7. T.D. 8,267 ft.; rec. 3,600 ft. of P.L.O. on D.S.T.; 7-in. csg. 8,265 ft.; tstg.

Conroe—Montgomery County

Butler & Hornes No. 1 Koonee, Collins Sur. Drlg. sh. 4,967 ft.

Humble O. & R. Co. No. 1 Taylor, R. Kuykendall Sur. Abd. 5,253 ft.

Normandie Oil Co. No. 27 Falvey, G. Harris Sur. Abd. 5,156 ft.

Sun Oil Co. No. 6 South Texas Dev. Co. T.D. 5,112 ft.; I.P. 80 B.P.H.; ½-in. ck.

Ace—Polk County

Peyton Bros. No. 1 A. H. Waldenan, P. A. Sublett Sur. R.U.

Segno—Polk County

J. K. Dorrance No. 3 Wing, I.&G.N. Sur. No. 15. 10¾-in. csg. 610 ft.; W.O.C.

Gulf Oil Corp. No. 1 Wing, I.&G.N. Sur. No. 15. Drlg. sh. 2,550 ft.

Humble O. & R. Co. No. 1 Kirby Lbr. Co., P. Garcia Sur. Top Cockfield 5,122 ft.; T.D. 5,202 ft.; 7-in. csg. 5,187 ft.; W. O.C.

Rajo Oil Corp. No. 1 Sarah Wing, I.&G.N. Sur. No. 15. Loc.

Quintana-O'Connor-Greta—Refugio County

Cosmo Pet. Co. No. 15 Heard, Lot 7. T.D. 4,920 ft.; I.P. 122 B.P.D.; 5/32-in. ck.

Cosmo Pet. Co. No. 16 Heard, Blk. 119, Refugio Townsite. Run sur. csg.

Hewitt & Daugherty No. 44 Lambert, Swisher Sur. No. 6. R.U.

Hewitt & Daugherty No. 47 Lambert, Swisher Sur. Drlg. 3,610 ft.

Illinois Pet. Co. No. 3 Heard, Ximines Sur. Drlg. 4,810 ft.

Josey & Bruton No. 1-B Lambert, Hews Sur. Drlg. 3,412 ft.

Quintana Pet. Co. No. 5 Heard, T. H. Webb Sur. Blew out; caught fire; abd.; T.D. 2,139 ft.

Quintana Pet. Co. No. 40 Lambert, Swisher Sur. Loc.

Quintana Pet. Co. No. 43 Lambert, Swisher Sur. Loc.

Quintana Pet. Co. No. 46-A Tomoconnor, J. M. Swisher Sur. No. 4. Cg. 5,925 ft.

Quintana Pet. Co. No. 3 Riley, M. J. Ximines Sur. T.D. 5,975 ft.; I.P. 574 B.P.D.; ¼-in. ck.

Quintana Pet. Co. No. 13-C Tomoconnor, Swisher Sur. Cg. 5,812 ft.

United Gas Corp. No. 40 Lambert, Blk. 43, Swisher Sur. T.D. 5,940 ft.; comp.; no gauge.

United Gas Corp. No. 43 Lambert, J. M Swisher Sur. T.D. 5,803 ft.; I.P. 4,903 B.P.D.

United Gas Corp. No. 48 Lambert, J. M. Swisher Sur. Drlg. 4,335 ft.

United Gas Corp. No. 50 Lambert, J. M. Swisher Sur. Drlg. 5,787 ft.

United Gas Corp. No. 12 J. J. O'Brien. T.D. 8,204 ft.; fsg.

Keeran—Victoria County

Gulf Oil Corp. No. 10 Keeran Estate, M. DeLeon Sur. Drlg. sh. 5,097 ft.

Union of California No. 3 J. M. Keeran Est., M. DeLeon Sur. T.D. 6,000 ft.; rng. csg. to perf. at 5,700 ft.

Placedo—Victoria County

Barnsdall-American Liberty Oil Co. No. 3 E. G. Gray, S.A.&M.G. Sur. T.D. 4,775 ft.; 7-in. csg. 4,754 ft.

Barnsdall-American Liberty Oil Co. No. 10 J. M. Pickering, Wm. Rupley Sur. Drlg. sh. 1,510 ft.

Barnsdall-American Liberty Oil Co. No. 14 Pickering, S.A.&M.G. Sur. Spudded.

Costa Oil Co. et al No. 2 J. E. Schovajsa, Wm. Rupley Sur. Drk.

Crown Central Oil Co. No. 4 O. M. Lauder, S.A.&M.G. Sur. No. 6. T.D. 4,786 ft.; tstg.; swbd. S.W. and oil; P.B. 4,780 ft.; shut in.

Magnolia Pet. Co. No. 6 Sklar, S.A.&M.G. Sur., Lot 8. Drlg. 3,487 ft.

Shell Pet. Corp. No. 2 Houston Natl. Bank, S.A.&M.G. Sur. No. 7. T.D. 4,770 ft.; 7-in. csg. 4,755 ft.

Superior Oil Prod. Co. and Gillespie No. 3 J. J. Hosek, S.A.&M.G. Sur. Drlg. 2,910 ft.

Superior Oil Co.-Gillespie No. 1 J. J. Hosek, S.A.&M.G. Sur. Drlg. 3,537 ft.

Westgate Oil Co. No. 6 F. F. Mieska, S.A. &M.G. Sur. No. 10. Drk.

Clay Creek—Washington County

Sun Oil Co. No. 1 H. Lauter, N. Clay Sur. 7-in. csg. 7,445 ft.; T.D. 8,306 ft.; P.B. to csg. seat; perf. csg. 7,549-7,365 ft. and 5,100-10 ft.; tstd. S.W.; cmtd. back 7,341 ft.

Virginia Oil Co. No. 1 Joe Kenieczny, S. M. Williams Sur. 10¾-in. csg. 104 ft.; drlg. 987 ft.

Five Corners—Wharton County

Texas Co. No. 7-B Pierce Est., J. Caldwell Sur. Drk.

Texas Co. No. 6-B Pierce, J. Hyland Sur. T.D. 5,554 ft.; 7-in. csg. 5,544 ft.; made squeeze job; W.O.C.

Pickett Ridge—Wharton County

Texas Co. No. 33-A Pierce Est., G.B.&N. Sur. No. 4; 9,000-ft. test. Bldg. drk.

Texas Co. No. 1 J. Tlustos, H.&T.C. Sur. No. 192. T.D. 4,602 ft.; 7-in. csg. 4,580 ft.; I.P. 37 B.P.D.; 6/64-in. ck.

Withers—Wharton County

Texas Co. No. 24-C Pierce Est., Wm. Pettus Sur. 10¾-in. csg. 1,207 ft.; drlg. sd. 5,540 ft.

Texas Co. No. 25-C Pierce Est., Wm. Pettus Sur. Drlg. sh. and L. 2,671 ft.

Texas Co. No. 26-C Pierce, Wm. Pettus Sur. 10¾-in. csg. 1,233 ft.

GULF COAST WILDCATS

Austin County

R. L. Hopkins No. 1 J. W. Recnecke, J. Stephenson Sur. R.U.

Brazoria County

Pure Oil Co. No. 1 P. M. Slade, S. F. Austin Lge. Drlg. sh. 6,223 ft.

Texas Co. No. 2 Robbins, James W. Brougham Sur. Drlg. sd. and L. 4,485 ft.

Calhoun County

Matagorda Oil Co. No. 1 Brundet, Tr. 8, Matagorda Island. 13⅜-in. csg. at 1,826 ft.

Fort Bend County

Research, Inc., No. 1 J. M. Moore, S. Kennedy Sur. Drlg. 200 ft.

Galveston County

Shell Pet. Corp. No. 2 Maco Stewart, 4,400 ft. E of No. 1 J. Spillman Sur. 10¾-in. csg. 1,484 ft.; T.D. 6,250 ft.; sdtrkd. 6,021 ft.; drlg. sh. 6,314 ft.

Hardin County

E. J. Kimball No. 1 Keitle Lbr. Co. Loc.

Harris County

Farrel and Cox No. 1 Bender, N. W. Travis Sur. 6⅝-in. csg. 1,000 ft.; abd. 1,200 ft.

R. W. Ford et al No. 1 W. A. and O. C. Pruitt, G. Brooks Sur. Loc.

George Lawrence et al No. 1 Zoppa, J. Farwell Sur. 10¾-in. csg. 605 ft.; T.D. 6,620 ft.; 5½-in. csg. on bottom; perf. csg. 6,412-28 ft.; flwg. est. 20 bbls. of dist. per day through 9/64-in. ck.

H. M. Harrell et al No. 1 F. N. Bullock, Charles Bowman Sur. Drlg. sh. and L. 3,567 ft.

Stanolind O. & G. Co. No. 1 Warren Minerals, H.T.&B. Sur. No. 1. 7⅝-in. csg. 5,749 ft.; T.D. 6,685 ft.; flwd. S.W. 6,549-87 ft.; set retainers 3,800 ft.; tstd. sulfur wtr.; set retainer at 3,700 ft.; perf. csg. 3,665-95 ft.; tstg.

Superior Oil Co. No. 1 Bentler, Ehrhardt Sur. Loc.

Texas Gulf Prod. Co. No. 1 Gillespie and Garnsey, Simon Contreras Sur. 10¾-in. csg. 1,438 ft.; T.D. 8,084 ft.; perf. csg. 7,097-7,100 ft.; showing oil and gas; swbg.

Houston County

American Liberty Oil Co. No. 1 J. D. Bean, D.W.R.R. Co. Sur. 10¾-in. csg. 1,796 ft.; T.D. 6,260 ft.; 7-in. csg. 6,120 ft.

H. L. Hunt No. 1 J. E. Elliott, J. M. Procella Sur. 13⅜-in. csg. 495 ft.; cg. sh. 5,909 ft.

Jackson County

Texas Co. No. 1 T. A. Mauritz, Morris and Cummings Sur. Rec. 130 ft. of mudcut oil, 350 lbs. pressure; T.D. 5,111 ft.; 7-in. csg. 5,080 ft.

Jefferson County

Humble O. & R. Co. No. 1 Jefferson Ld. Co., C. Hillibrant Sur. T.D. 8,232 ft.; 7-in. csg. 8,162 ft.; T.D. 8,458 ft.; cutting and pulling stuck D.S.; P.B. 7,860 ft.; drld. out 7,880 ft.; perf. csg. 7,830-45 ft.; flwd. dry gas and S.W.; killed; P.B. to test upper sd.

Magnolia Pet. Co. No. 1 J. H. Phelan, T.&N.O. Sur. No. 14. Drlg. sh. 1,505 ft.

David B. MacDaniel et al No. 1 Nona Mills, J. C. Grant Sur. Drlg. 3,620 ft.

Lavaca County

Welshire Union Oil Co. No. 1-A Pohl, F. Bass Sur. T.D. 3,250 ft.; P.B. 2,950 ft.; two tests failed; S.D.

Liberty County

Jack Frazier et al No. 1 B. F. Haoachy, Hugh B. Johnson Sur. Drk.

Matagorda County

Continental Oil Co. No. 2 Robbins, J. C. Franz Sur. 11¾-in. csg. 6,430 ft.; T.D. 8,912 ft.; 8⅝-in. csg. 8,912 ft.; W.O.C.

Glenn McCarthy No. 1 Foley, sec. 19, Susan Perkins Sur. 10¾-in. csg. 2,008 ft.; T.D. 8,585 ft.; oil sd.; rng. 7-in. csg. perf. csg. 8,573-83 ft.; gas and S.W.; set retainer at 7,906 ft.; perf. csg. 7,873-85 ft.; flwg. gas and wash wtr.

United North & South Development Co. No. 1, J. S. Cotton Sur. Cg. 8,877 ft.

Polk County

C. E. Gates No. 1 L. O. Jackson, J. W. Abbey Sur. M.I.

Mayo et al No. 1 Catline Mayo, J. G. Loving Sur. 10¾-in. csg. 250 ft.; S.D. 1,600 ft.; move in steam rig.

Refugio County

Wynne Drlg. Co. No. 1 C. D. Roadche-J. Patrick and J. Downey Sur. Drlg.

Tyler County

Republic Prod. Co.-Houston Oil Co. No. 2 Hurd, N. Hurd Sur. 10¾-in. csg. 2,296 ft.; S.D. 6,220 ft.

Victoria County

Commonwealth O. & G. Co. No. 3 W. H. Bennett, J. Estuvan-Galbon Sur. Rng. csg.; T.D. 5,475 ft.; showed no pressure and 400 ft. of drlg. mud cut with oil; S.D.

Magnolia Pet. Co. No. 1 Annie B. Wayne, T.&N.O. Sur. No. A-407. Tstd. gas on D.S.T. at P.B. depth 2,519 ft.

Walker County

Garland, Hartman & Page No. 1 Carey Ld. & Dev. Co., D. M. McDonald Sur. R.U.

Waller County

Nine Blumenthal No. 1 Alex P. Kelley, S. H. Haddin Sur. Drlg. sh. 664 ft.

Nina Blumenthal No. 1 Chapman, M. Donoho Sur. M.I.R.

Wharton County

J. F. Hutchins No. 1 J. J. Winsley, James Tumlinson Sur. 10¾-in. csg. 647 ft.; drlg. 3,612 ft.

Texas Co. No. 1 Kluck, Jos. Hyland Sur. S.D. 6,526 ft.; P.B. and sdtrkd. 4,426 ft.

Texas Co. No. 1 E. A. Weatherer, L. P. Ogden Sur. Abd. 6,524 ft.

S. W. TEXAS WILDCATS

Aransas County

Barnsdall Oil Co. No. 1-A Kate Edwards, 330 ft. S line, Lot 85, 660 ft. SW No. 1, Wm. Lewis Sur. Set 10¾-in. csg. 1,408 ft.; drlg. 6,326 ft.

J. L. Collins No. 1 Wheeler, Cen. Tuton Sur., Tr. 2-D. R.U.

Atascosa County

Frontier Oil Co. No. 1 Oppenheimer, John Sharp Sur. Set csg. 2,770 ft.; P.B. 2,667 ft.; acidizing.

R. J. Roberts et al No. 1 Elder, Sur. 190. T.D. 3,160 ft.; rebldg. drk.

Wheelock & Collins No. 1 Turner, A. Sitton Sur. Drlg. 563 ft.

Bee County

L. Glasscock No. 1 Ablinger, J. Rvan Sur. Set sur. csg. 1,350 ft.; drlg. 3,621 ft.

Blanco County

E. L. Nixon No. 1 Hornberger, 1,200 ft. S line, 300 ft. E line, Sur. 723. Set csg. 837 ft.; W.O.C.

Brooks County

Standard of Tex. No. 1 Mestina, Mestina Lse. No. 3. Set condr. csg. 100 ft.; drlg. 1,211 ft.

Burleson County

M. R. Exploration Co. No. 3 Fountain, Wm. Ralcigh Sur. M.I.M.

Red Bank Oil Co. No. 2 Grann, 6,063 ft. N line, 1,900 ft. W line, E. Santef Sur. M.I. rig.

Caldwell County

Housel Oil Co. No. 1 Woolridge, near Joliet. Drlg. 407 ft.

C. A. McDaniels No. 1 Trammel, H. Hunter Sur. T.D. 2,314 ft.; S.O.; acidizing.

C. A. McDaniels No. 1 Tinkle, S. Seal Sur. T.D. 2,681 ft.; P.B. 2,490 ft.; swbg. oil.

Sherman Nelson No. 1 Etheridge, T. Hunter Sur. Set csg. 1,970 ft.; W.O.C.

George Young No. 1 Schmidt, 1,265 ft. E line, 150 ft. S line, Williams Sur. Set csg. 1,362 ft.; W.O.C.

Cameron County

Saxet Prod. Co. No. 1 Port Isabel Irr. Co., 600 ft. N line Loma Alta Lake, Sh. 29, Espiritu Santo Gr. Loc.

Stapper Petroleum Corp. No. 1 Port Isabel Irrigation Co., Blk. 17, P.I.I.Co. Subd Santo Gr. S.D. for repairs 6,170 ft.

Dimmitt County

Wilcox O. & G. Co. No. 1 Light ranch, 330 ft. N and E line, sec. 67. Drlg. 1,223 ft.

Duval County

Atlantic Ref. Co. No. 1 Lowe ranch, 330 ft. E line, 1,678 ft. NE cor. Sur. 466. S.D.; repairs; T.D. 2,925 ft.

Clark & Cowden No. 3 Richardson, 2,310 ft. W line, 330 ft. S line, Sur. 5. R.U.

Diamond Halff Oil Co. No. 1 Sinclair, sec. 405. Drlg. 543 ft.

Frank Gravis No. 1 Vaello Puig, 330 ft. W line, 2,718 ft. S line, 1,760.73-ac. tr., Sur. 250. Drlg. 5,016 ft.

C. K. Gravis No. 1 Holzapfel, N½ Sur. 42. D.&A. 2,543 ft.

H. F. Grimm No. 1 Mew, Sur. 289. Set sur. csg.; W.O.C.

Intrepid Oil Co. No. 3 Parr, SW¼, sec. 26. Loc.

Magnolia Pet. Co. No. 1 D.C.R.C., 330 ft. S and W lines, lse., sec. 902. Loc.

Texas Co. No. 2-C D.C.R.C., Sur. 194. D.&A. 2,224 ft.

E. R. Thomas Estate No. 3 Parr, SW¼, Sur. 26. Drlg. 2,817 ft.

Edwards County

Auld, Dodson & Lyman No. 1 Rigsby, sec. 16. Drlg. 556 ft.

I.T.I.O. No. 1 Love & Evans, sec. 66, Blk. 3, G.W.T.&P. Ry. Sur. (Workover). Prep. deepen from O.T.D. 3,002 ft. to 6,250 ft.

Frio County

Amerada Pet. Corp. No. 1 Harriman, Flores Sur. 306. Drlg. 5,386 ft.

Guadalupe County

Byrd Oil Co. No. 1 Schueneman, G. Dewitt League. Cg. chalk.

Louis Crouch No. 1 King, J. D. Clements Sur. R.U.

Lincoln Pet. Co. No. 1 Baenzinger, Mansola Sur. Set csg. 1,990 ft.; drlg. plugs.

Robertson et al No. 1 Blumberg, M. Baker Sur. Drlg. 1,026 ft.

Jim Hogg County

Cole Pet. Co. No. 1 Yeager, Sur. 452. R.U.

Gifford Oil Co. and Purnell No. 2 Armstrong, S½, Sur. 43. Drlg. 323 ft.

S. Payne No. 1 Holbien, 150 ft. N and W lines, Blk. 10, Sh. 3, Animas Gr. R.U.

Jim Wells County

Baltic Drlg. Co. No. 1-A Owens, Sur. 181. Sd. 5,750-5,800 ft.; D&A. 5,800 ft.

Roberts et al No. 1 Wade, Lot 2, Wade ranch. Loc.

Tesmalis & Reese No. 1 Martha Earhart, 330 ft. S and W lines, 80-ac. tr., Suggs Sur. Drlg. 1,517 ft.

Karnes County

De Graff & Reele No. 1 Cochran, 460 ft. E line, 160 ft. S line, McConnell Lge. Drlg. 1,026 ft.

Victoria Drlg. Co. No. 1 John Yanta, J. Hardaway Sur. T.D. 1,511 ft.; S.D.

Victoria Drlg. Co. No. 1 Wm. Yanta, J. Hardaway Sur. M.I.M.

Kerr County

S. W. Forrester No. 1 Bailey, Brendle Sur. No. 408. Drlg. 1,016 ft.

Live Oak County

R. H. Feltner No. 2 Sanger, 330 ft. W line, 990 ft. N line, Sur. 385. R.U.

E. M. Jones No. 3 Ezell, SE¼, sec. 3, Ezell ranch. Loc.

Loma Oil Co. No. 2 Cardwell, 95-ac. tr., Sparks Sur. Loc.

R. B. Sanger No. 1 Adams, 330 ft. N and E lines, 80-ac. tr., Sur. 122. R.U.

L. W. Steiren No. 1 Lang, N. Simmons City. Drlg. 672 ft.

McMullen County

Big Rock Oil Corp. No. 1 Martin, Uleiting Sur. No. 6. S.D. 532 ft.

Howell Oil Corp. No. 1 Martin, Sur. 213. Set csg. 60 ft.; W.O.C.

Humble O. & R. Co. No. 1 Gouger, 330 ft. S and E lines, SE¼, sec. 46. Drlg. 2,210 ft.

Reynolds & Richardson No. 1 Shiner ranch, sec. 39, C. C. Shumway Subd. R.U.

Rowan & Hope No. 1 Rhodes, NE¼ sec. 18, Seale & Morris Sur. M.I.M.

F. D. Salter No. 1 fee, J. D. Osborn Sur. R.U.

LEGAL

U. S. Department of the Interior, General Land Office, Washington, D. C. Notice is hereby given that Unit No. 1 embracing SW¼ SW¼ Sec. 4, T. 23 N., R. 15 W., 40 acres, and Unit No. 2, embracing NW¼ SW¼, S½ SW¼, SW¼ SE¼, Sec. 6, T. 23 N., R. 15 W., 113.38 acres, in the Rodessa Oil and Gas Field, Caddo Parish, Louisiana, are offered to the responsible qualified bidder of the highest bonus per acre, the minimum bid being $1 per acre, under section 17 of the leasing act of February 25, 1920 (41 Stat. 437), as amended by the act of August 21, 1935 (49 Stat. 674), at the royalty rate scale in the lease form shown in Circular 1386, at a sale to be held in the Federal Court Room, Post Office Building, Shreveport, Louisiana, at 12:00 noon, on April 23, 1937. The successful bidder must deposit on the day of the sale a certified check on a solvent bank, or cash, for one-fifth of the amount of each bid and file the showing of qualifications to receive a lease required by section 7 of General Land Office Circular 1386. The remaining four-fifths, together with the annual rental in advance at the rate of $1 per acre must be paid prior to the issuance of the lease. The bidders are warned against violation of the provisions of section 59 of the United States Criminal Code approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. (Signed) Fred W. Johnson, Commissioner.

Medina County

A. Chmel No. 1 Odem, 160 ft. W line, 493 ft. N line tr., Castro Sur. 174. M.I.M.
Gates, Hill & Mead No. 1 Kreisle, Sur. 908. Loc.

Nueces County

Baltic Drlg. Co. No. 1 Poenisch, Lot 2, Blk. 32, Flour Bluff Addn. (workover of former Hurlburt test). O.T.D. 6,250 ft.; R.U.; S.D.
L. Glasscock No. 1 Kansas Life. Ins. Co., 330 ft. N and W line, sec. 196. M.I.M.
E. M. Jones No. 1 Cook, 2,500 ft. N line, 330 ft. E line, 546-ac. tr., Guadrilla Irr. Co. Sur. 139. Sd. 3,532-39 ft.; slight S.G.; D.&A. 7,020 ft.
Sloan & Green No. 1 Cassens, sec. 26, Longorio Sur. R.U.
Southern Minerals Corp. No. 1 R. King, sec. 32, King Farm Lots. D.S.T. 4,021-33 ft.; rec. 400 ft. oil and mud and 45 ft. S.W.; 6 lbs. W.P. in 5 min.; cg. sd. 5,-204 ft.
Steve Paul No. 1 Smith, 1,650 ft. E line, 330 ft. S line, sec. 38, Flour Bluff Encinal Trs. Loc.
Taylor Pet. Co. No. 1 Stiles, Blk. 14, sec. 18, Petronilla ranch. Spudd.
Wellington Oil Co. and Seaboard Oil Corp. No. 1 Dugger, sec. 125, Park Subd. Loc.

Real County

Sun Oil Co. No. 1 Dietert, 1,980 ft. E line, 660 ft. S line, sec. 7, G.W.T.&B. Sur. Fsg. 5,630 ft.

San Patricio County

Buckingham Oil Co. No. 1 G. Davis, sec. 27. Loc.
Eleanor Oil Co. No. 1 Davis, 208.8-ac. tr., G. Grover Sur. M.I.M.
Eleanor Oil Co. No. 1 Green Est., 1,674-ac. tr., T. T. Williamson Sur. Sds. 6,573-77 ft., 6,580-90 ft. and 6,592-96 ft.; odor oil; drlg. 7,126 ft.
Phillips Pet. Co. No. 1 Schmidt, sec. 81, Paul Subd. Attempted D.S.T. 5,330-53 ft.; failed to hold; rec. 100 ft. mud and oil odor; drlg. sh. 6,207 ft.
Wheelock & Collins No. 1 Willis, Lot 3, Gregory Farm Sur. R.U.
Windsor Oil Co. No. 1 Bissett, Tr. 3, Trivoli Subd., Crockett Sur. Loc.

Starr County

Cook, Morris & Arnold No. 2 S.U.C.C., Blk. 23, Porc. 89. R.U.
C. T. Daye No. 1 Seabury, Sh. 5, Porc. 75. Drlg. 326 ft.
Donroy Oil Co. No. 1 Ramon, 2,400 ft. SE line, 150 ft. SW line, sec. 150. Cg. 1,281 ft.
G. Harroun No. 1 Guerra, Blk. 6, Porcs. 55 and 56. Drlg. 1,853 ft.
Transwestern Oil Co. No. 2 Slick, 330 ft. N and E lines, sec. 527. Drlg. 2,016 ft.

Webb County

Boiling & Coffey No. 1 So. Tex. Oil Co., Sur. 768. Loc.
E. Garner No. 1 Saldivar, Blk. 12, Sur. 657, J. V. Borrego Gr. Drlg. 736 ft.
O. W. Killam No. 1 Laurel Bros., Sur. 333. Drlg. 1,316 ft.
Lu-Tex Oil Co. No. 1-A Lone Star Constr. Co., Blk. 26, Porcs. 12, 13 and 14. Drlg. 1,916 ft.
J. W. Magee No. 1 Garcia, Blk. 21, James Subd. R.U.
Mills Bennett Prod. Co. No. 2 Slator, Blk. 89, Mission Subd., Borrego Gr. Loc.
Ohio Fuel Oil Co. No. 2 D.C.R.C., Blk. 20, Sur. 100. Loc.
Vernor & Carson No. 1 Webster. Sd. 2,-138½-42 ft.; tstg.

Willacy County

Ruez-Morton, Inc., No. 1 F. Armendiaz, C Lot 9, Sh. 4, San Juan de Carricitos Gr. Drlg. 537 ft.
Ruez-Morton, Inc., No. 1 Johnson-Stillman, Lot 14, Blk. 25, Sh. 44, San Juan de Carricitos Gr. Drlg. sh. 526 ft.
Shell Pet. Corp. No. 1 Yturria, Sh. 64, San Juan de Carricitos Grant (workover). T.D. 7,662 ft.; to drill deeper; R.U.

Zapata County

H. Guinn Lewis No. 1 S. Benavides, Blk. 39, Villa Gr. Cg. 852 ft.
Mills Bennett Prod. Co. No. 1 Martinez, Blk. 84, Sh. 1, Grullo Gr. T.D. 2,515 ft.; P.B. 1,196 ft.; swbd. dry; D.&A.
R. Wheeless No. 1 Welch, Blk. 1, E. K. Bateman Subd. Drlg. 1,943 ft.

Zavalla County

Wilcox O. & G. Co. No. 1 Gillman, sec. 11. Drlg. 2,611 ft.

S. W. TEXAS PROVEN

McCampbell—Aransas-San Patricio Counties

Atlantic Ref. Co. No. 2 Maryland Trust Co., 330 ft. N and E lines, Blk. 23. Drlg. 2,577 ft.
Atlantic Ref. Co. No. 4-B McCampbell, Lot 7, Blk. 40. Sd. 6,540-44 ft.; comp.; 132 B.P.D. on ⅛-in. ck.
Atlantic Ref. Co. No. 5-B McCampbell, Lot 5, Blk. 49. Set sur. csg.; W.O.C.
Atlantic Ref. Co. No. 4-C McCampbell, Lots 11 and 12, Blk. 40. Sd. 6,536-44 ft.; comp.; 135 B.P.D. on 3/16-in. ck.
Buckingham Oil Co. No. 2-B McCampbell, Lot 13, Blk. 40. Sd. 7,320-7,400 ft.; S.O. &G.; set csg. 7,440 ft.; W.O.C.
Buckingham Oil Co. No. 4-A McCampbell, Blk. 41, Orick Sur. Sd. 6,540-48 ft.; set csg. and perf. 6,540-44 ft. and 6,546-48 ft.; sanded up; reworking.
Buckingham Oil Co. No. 6-A McCampbell, Blk. 41. Drlg. 4,026 ft.
Collins & Broughton No. 1 McCampbell, Lot 5, Blk. 37, McCampbell Subd. Sd. 6,546-58 ft.; set csg. 6,560 ft.; swbd. S.W.
Landreth Prod. Co. No. 1 McCampbell, Lot 4, Blk. 40. Set sur. csg.; W.O.C.
J. Nelson No. 1 Riggs, 330 ft. NW line, 213 ft. SW line, 6.46-ac. tr., Trs. 12 and 13, Blk. 16. Loc.
Rutherford Oil Co. No. 1 Scrivner, 330 ft. NE and NW line, Lot 16. Drlg. 1,267 ft.

Plummer—Bee County

Ann Oil Co. No. 1 Smith, Plummer Chessman Sur. Drlg. 3,011 ft.

Strouch—Bee County

Dirks Bros. No. 2 Strouch, 133-ac. tr., J. M. Uranga Gr. Cg. 4,216 ft.

Alta Mesa—Brooks County

Standard of Texas No. 1 Garcia, 1,398 ft. N and W lines, Tr. 1, Sh. 1-A, La Mestina de Gonzales Sur. T.D. 2,566 ft.; comp.; est. 150 B.P.D.
Standard of Texas No. 3 Garcia, 615 ft. S line, 465 ft. W line, Tr. 1, Sh. 1-A, La Mestina de Gonzales Sur. T.D. 2,489 ft.; sd. 2,470-75 ft.; comp.; est. 185 B.P.D.
Standard of Texas No. 4 Mestina, Lse. No. 1. R.U.
Standard of Texas No. 5 Mestina, Lease No. 1. R.U.

Branyon—Caldwell County

Adams & Lyles No. 3 Ellison, D. Cooper Sur. Cg. 2,047 ft.
R. B. Byrd No. 1 McGee, J. A. Neal Sur. Drlg. 212 ft.
J. W. Leonard No. 1 White, 800 ft. N Lockhart Townsite. T.D. 2,306 ft.; acidizing.
Lincoln Pet. Co. No. 4 Branyon, Cooper Sur. Loc.
Taylor Pet. Co. No. 1 Caldwell County, 4-ac. tr., D. Cooper Sur. Drlg. 566 ft.
Whisenant & Trenchard No. 1 Young, J. R. Miller Sur. T.D. 2,225 ft.; R.U. to pmp.

Dunlap—Caldwell County

Kay Oil Co. No. 1 Dunlap, S. Seale Sur. Set csg. 1,928 ft.; W.O.C.

Charamousca—Duval County

N. V. Duncan No. 5 Worden & Draught, Sur. 151. Tstg. sd. 1,515-22 ft.
Magnolia Pet. Co. No. 2 D.C.R.C., W½, Sur. 152. T.D. 1,562 ft.; comp.; est. 40 B.P.D.

Colmena—Duval County

J. L. Collins No. 1 D.C.R.C., Blk. 8, sec. 52. Loc.
Conservative Oil Co. No. 2 Brown-Sentz, Blk. 12, sec. 51. M.I.M.
Wellington Oil Co. No. 5 D.C.R.C., Blk. 10, sec. 51. R.U.

Driscoll—Duval County

Continental Oil Co. No. 13-A Sevier, Sur. 448. Drlg. 3,396 ft.
Kepley Prod. Co. No. 2 Sevier, Sur. 447. Loc.

El Mesquite—Duval County

Rogers & Rogers No. 3 Pena, El Mesquite Gr. R.U.

Government Wells—Duval County

Magnolia Pet. Co. No. 16 Wilson, Sur. 248. Drlg. plugs 2,442 ft.
Southwest Prod. Corp. No. 2 Luptack, SE¼, Sur. 41. R.U.

Hoffman—Duval County

Bridwell Oil Co. No. 3-A Green, Sur. 118. Drlg. 2,016 ft.
Bridwell Oil Co. No. 7-B Hoffman, Sur. 122. Sd. 2,697-2,712½ ft.; tstd. oil and S.W.; S.D.; T.D. 2,730 ft.
Duval Oil Corp. No. 11 Hoffman, Sur. 118. T.D. 2,869 ft.; comp.; 25 B.P.D.
Standard of Kansas No. 4 Green, Sur. 118. Loc.

Kohler—Duval County

Chiquita Oil Co. No. 1 Peters, 162-ac. tr., Sur. 162. Drlg. wtr. well.
Humble O. & R. Co. No. 1-A Peters, N½, NE¼, Sur. 397. Drlg. 1,226 ft.
Windsor Oil Co. No. 5-B Peters, Sur. 34. Loc.

Labbe—Duval County

Magnolia Pet. Co. No. 3 Labbe, 330 ft. N and E lines, Sur. 221. Sd. 2,863-71 ft.; tstg.

Loma Novia—Duval County

Bridwell Oil Co. No. 8-A Hahl, Blk. 28, Sur. 250. Cg. 2,407 ft.
Coffield & Lanning No. 1 Ritter, 330 ft. S line, 1,120 ft. W line, sec. 73. D.&A. 2,646 ft.
Duval Oil Corp. No. 32 Bishop, sec. 57. T.D. 2,572 ft.; comp.; 75 B.P.D.
Eastern Texas Prod. Co. No. 5 Hubbard, Sur. 71. Tstg. sd. 2,572 ft.
F. J. Gravis No. 2 Hahl, SE¼, NE¼, sec. 64. R.U.
Humble O. & R. Co. No. 22-B Hubbard, W½, sec. 83. T.D. 2,765 ft.; oil sd.; W.O.C.
Humble O. & R. Co. No. 27 Ruiz, Sur. 553. Drlg. sh. 2,754 ft.
Humble O. & R. Co. No. 8 Vela, N½, sec. 42. Loc.
Magnolia Pet. Co. No. 13 Herbst, Sur. 70. T.D. 2,743 ft.; tstd. S.W.; comp.; pmpg. est. 40 B.P.D.
Ralph Ogden No. 2-A Pure Ruiz, Sur. 41. Sd. 2,590-95 ft.; set csg. 2,589 ft.; tstg.
Texas Co. No. 23 Bishop, N¼, Sur. 57. Swbg. 2,582 ft.

Lopez—Webb—Duval Counties

W. C. Billings No. 1 fee, Sur. 2. Cg. 2,-253 ft.
Cox & Hamon No. 9 Peal, NE ¼, Sur. 796. Comp.; 120 B.P.D.; T.D. 2,216 ft.
Humble O. & R. Co. No. 9-C D.C.R.C., Sur. 901. T.D. 2,140 ft.; comp.; 8 B.P.H.
Humble O. & R. Co. No. 13-C D.C.R.C., Sur. 901. T.D. 2,083 ft.; comp.; 7,000,-000 ft. gas.
Humble O. & R. Co. No. 14-C D.C.R.C., Sur. 901. Set csg. 2,083 ft.; T.D. 2,084 ft.
Humble O. & R. Co. No. 15-C D.C.R.C., Sur 901. Set csg. 2,089 ft.; W.O.C.
Kepley Prod. Co. No. 1 Billings, NW¼, Sur. 6. Spudded.
C. F. Lewis No. 1 Lopez, sec. 110. Comp.; 100 B.P.D.; T.D. 2,250 ft.
C. F. Lewis No. 13 Lopez, sec. 110. W.O.C. 20 ft.
Mortimer & Springer No. 28-B Peal, Sur. 794. Sd. 2,189-91 ft.; set csg.; comp.; 18 B.P.H.
Mortimer & Springer No. 26-B Peal, Sur. 794. Drlg. 2,026 ft.
Mortimer & Springer No. 1 Valadez, Sur. 73. T.D. 2,152 ft.; comp.; 192 B.P.D.

Palangana—Duval County

F. J. Gravis No. 2-A Schallert, Sur. 255. Set sur. csg.; W.O.C.
Penn Palangana Oil Co. No. 3 C. K. Gravis, Sur. 250. R.U.

Piedra Lumbre—Duval County

Magnolia Pet. Co. No. 14 D.C.R.C., Sur. 100. Sd. 1,978-90 ft.; comp.; 240 B.P.D.; T.D. 1,993 ft.
Magnolia Pet. Co. No. 15 D.C.R.C., Sur. 100. Set sur. csg. 134 ft.; W.O.C.
Magnolia Pet. Co. No. 21 D.C.R.C., Sur. 100. R.U.

Sarnosa—Duval County

Bowler & Borsodi No. 1 Sutherland, 80-ac. tr., sec. 126. Drlg. 2,226 ft.

Seven Sisters—Duval County

A. J. Brinkoeter No. 1 Garcia, Sur. 212. Cg. 2,635 ft.
Humble O. & R. Co. No. 7 Dowdy, sec. 272. Set csg. 2,551 ft.; comp.; 120 B.P.D.
Humble O. & R. Co. No. 8 Dowdy, Sur. 272. Set csg. 2,557 ft.; W.O.C.
Humble O. & R. Co. No. 9 Dowdy, Sur. 272. Drlg. sh. 2,536 ft.
Reliance Oil & Roy Co. No. 2 Lichtenberger, S½, sec. 225. R.U.
Texas Co. No. 12 Badgley, Sur. 307. T.D. 2,528 ft.; comp.; 36 B.P.H. on ¼-in. ck.
Westheimer & Daube No. 31 Campos, Sur. 224. Tstg. sd. 2,709 ft.
Westheimer & Daube No. 32 Campos, Sur. 224. Tstg. sd. 2,717 ft.

Sweeden—Duval County

Hiawatha O. & G. Co. No. 1 Herberger, 330 ft. S and W lines, sec. 10, Agua Poquita Gr. Sd. 5,875-87 ft.; T.D. 5,896 ft.; swbd. S.W. and S.S.O.; P.B. to retest.
Hiawatha Oil Co. No. 1 Southland, sec. 15, Ball Ranch Subd. Set sur. csg. 1,-050 ft.; W.O.C.

Pearsall—Frio County

Amerada Pet. Corp. No. 8 Halff & Oppenheimer, S. A. Ditch Sur. 1,104 (W.O.). Drlg. L. 8,026 ft.

Slick—Goliad County

G. W. Allen No. 1 fee, O. Marshall Sur. Drk.
Dirks Bros. No. 1 Allen, O. Marshall Sur. Drlg. 4,187 ft.

Clark—Guadalupe County

Diamond Halff Oil Co. No. 2 Larison, G. DeWitt Sur. Spudded.
Kenedy & Crowley No. 1 Johns, Davis Sur. T.D. 2,507 ft.; completing.
D. Mulholland No. 1 Johns, J. K. Davis Sur. Spudded.

Darst Creek—Guadalupe County

J. E. Clark No. 1 Anderson, 8 mi. W of Seguin. Cg. 1,926 ft.
Diamond Halff Oil Co. No. 1 Bibbs, Robinson Sur. Top Edwards 2,852 ft.; drlg. 4,221 ft.
Freeman Oil Co. No. 3 Larrison, G. DeWitt Sur. T.D. 2,700 ft.; dry; P.B. 2,450 ft.; W.O.C.
LaJita Corp. No. 3 Denman, 50-ac. tr. Comp. 91 B.P.D.; T.D. 2,438 ft.
Riddle Oil Co. No. 1 Williams, G. DeWitt Sur. R.U.
Saxet Prod. Co. No. 2 Wilson, G. DeWitt Sur. No. 13. Drlg. plugs in chalk.
V. G. Schimmel No. 2 Grimm, DeWitt Sur. T.D. 2,525 ft.; set csg. 2,383 ft.; W.O.C.
T. Staats No. 1 Wilson, G. DeWitt Sur. Set sur. csg.; W.O.C.
Watson No. 1 DeLancey, 400-ac. tr. Set csg. in chalk; drlg. plugs.

Nolte—Guadalupe County

Riddle Oil Co. No. 1 Herff, Gortari Sur. No. 76. T.D. 2,160 ft.; set csg. on 100-ft. sat. chalk; drlg. plug.
Riddle Oil Co. No. 2 Nolte, Lowell Sur. 16. Cg. 1,967 ft.
Wheelock & Collins No. 1 Warnecke, 335-ac. tr. R.U.

Zoborowski—Guadalupe County

Louis Crouch No. 1 Gatzke, Clements Sur. Comp.; small well; top chalk 2,183 ft.; T.D. 2,263 ft.

LaBlanca—Hidalgo County

Gulf States Oil Co. No. 3 Engleman, Lot 3, Blk. 70, Las Mestanas Gr. (workover). T.D. 8,123 ft.; set csg. on bottom; perf. 8,016-21 ft. and 8,024-34 ft.; no shows.
Sterling O. & R. Co. No. 1 Engleman, 660 ft. N and E lines, Lot 8, Blk. 95. Sd. 7,495-7,555 ft.; S.O.&G.; drlg. 7,882 ft.

Mercedes—Hidalgo County

Union Sulphur Co. No. 7 American Rio Grande, Tr. 2,309, Blk. 59 (workover). Perf. csg. 7,481-91 ft.; P.B. 7,592 to 7,-513 ft.

Samfordyce—Hidalgo-Starr Counties

Barnsdall and Phillips No. 11 Yturria, E½ Porc. 100. Loc.
Cosmo Petroleum Co. No. 1 Guerra, Sh. 254, Porc. 40. Drlg. 2,817 ft.
Ralph Fan No. 2 Flores, 28-ac. tr., Sh. 250, Porc. 38. Sd. 2,941-60 ft.; comp.; est. 200 B.P.D. on ¼-in. ck.; T.D. 2,962 ft.
Sun Oil Co. No. 1 Chapitol, Porc. 99. T.D. 2,040 ft.; P.B. 1,300 ft.
Val-Tex Oil Co. No. 2 Chapa, Tr. 250, Porc. 39. Set csg.; T.D. 3,008 ft.; perf. 2,944-46 ft.; stdg.
Young & Bonnear No. 1 Diaz, Tr. 331, Porc. 40. Cg. 1,863 ft.

Alworth—Jim Hogg County

French Oil Co. No. 2 Garza, Blk. 1, Sur. 269. Sd. 1,033-35 ft.; set csg.; S.G.
French Oil Co. No. 3 Garza, Blk. 1, Sur. 261. Spudded in.

Bentonville—Jim Wells County

Tom Graham No. 2 Luby, Share 4, Los Presnos de Abajo Gr. Perf. 4,025-40 ft.; rng. tbg.
LaJita Co. No. 3 Pope, sec. 20. Loc.
Texon Drlg. Co. No. 2 Ralston, 990 ft. N line, 330 ft. W line, sec. 17. Loc.

West Premont—Jim Wells County

Diamond Halff Oil Co. No. 1 Peterson, Lots 104 and 105, sec. 76. Sd. 2,246-60 ft.; set csg. 2,262 ft.; completing.
Diamond Halff Oil Co. No. 1 Thirkel, Lots 66 and 79, sec. 77. Drlg. 1,511 ft.
C. G. Glasscock No. 1 Ritter, Lot 45, Haldeman Subd., sec. 76. W.O.; R.U.
Gouger & Mode No. 1 Bennett, Lots 55 and 58, Haldeman Subd., sec. 76. Sd. 2,244-59 ft.; set csg.; W.O.C.
Graham & Gilcrease Oil Co. No. 1-C Bennett, Lots 89 and 90, Haldeman Subd., sec. 76. Loc.
Tom Graham and Gilcrease No. 3-B Bennett, Sur. 76. Set sur. csg.; W.O.C.
Henshaw Bros. No. 1 McGuffin, W½, sec. 230. R.U.

Sandia—Jim Wells County

O. W. Killam No. 1-B Wade, Lopez de Jean Gr. R.U.

Kingsville—Kleberg County

Clark & Stilzig No. 3 Kivlin, Blk. 8, sec. 39. Loc.
Great States Oil Co. No. 1 Kivlin, Blk. 4, sec. 39. S.D. 2,485 ft.; D.&A.
Humble O. & R. Co. No. 9 Kleberg, Lot 2, sec. 40. Drlg. 2,291 ft.

Oakville—Live Oak County

Simmons O. & G. Co. No. 1 McGriff, 150 ft. S and E lines, 94-ac. tr., Romero Sur. Set sur. csg. 162 ft.; W.O.C.

Calliham—McMullen County

Conservative Oil Co. No. 17 Stitz, J. Gardner Sur. Loc.
R. P. Lightfoot No. 9 Lark, Blk. 118, Scrugham Sur. Loc.

Loma Alta—McMullen County

J. T. Lanier No. 1 Hagist, SE¼, N½, Sur. 481. Loc.

Agua Dulce—Nueces County

Stoddart & Moss No. 1 Colman, 330 ft. NW and NE lines, SE¼ SW 330-ac. tr., sec. 206. S.D. 6,885 ft.; blew out and closed in; to attempt comp. through drill stem; S.D.
Texon Drlg. Co. No. 2-B Sevier, 880-ac. tr., W. W. Chapman Lds., Palto Alto Gr. Set 16-in. csg. 300 ft.; T.D. 6,350 ft.; set csg.; pmpg. mud to kill wild No. 2; T.D. 6,465 ft.
United Prod. Co. No. 1 Harvey, 1,100 ft. W line, 1,050 ft. N line, tr., M. Garza Sur. Oil sd. 7,382-95 ft.; cap. 7,396-98 ft.; top S.W. sd. 7,398 ft.; cg. wtr. sd. 7,-535 ft.
J. P. Walker et al No. 2 Ingram, Blk. 8, sec. 6, Ross Peters Subd. Prep. spud.

Baldwin—Nueces County

Heyser & Heard No. 1 Kosar, 152-ac. tr., M. J. Cody Sur. Drk.

Chapman Ranch—Nueces County

Seaboard & Allen No. 1-B Chapman, 1,980 ft. N line, 660 ft. W line, sec. 37. Set sur. csg.; drlg. below.
Seaboard & Allen No. 3 Chapman, 1,650 ft. W line, 330 ft. S line, sec. 38. Drlg. 4,823 ft.

Clara Driscoll—Nueces County

Houston Oil Co. No. 1 Sevier, 330 ft. S and W lines, 77.1-ac. tr., Quadrilla Irr. Co. Sur. Loc.
Magnolia Pet. Co. No. 2 Sevier, 330 ft. S and W lines, 80-ac. tr., R. Russell Sur.

LEGAL

Department of the Interior, U. S. Land Office, Las Cruces, New Mexico. Notice is hereby given that the W½ and W½ SE¼ Sec. 15, T. 17 S., R. 32 E., N.M.P.M., 400 acres, Baish oil and gas field, New Mexico, is offered to the responsible qualified bidder of the highest bonus per acre for lease under Section 17 of the act of February 25, 1920 (41 Stat. 437) as amended by the act of August 21, 1935 (49 Stat. 674), at the royalty rate scale in the lease form shown in Circular 1386, at a sale to be held in the United States Land Office, Las Cruces, New Mexico, at ten oclock, A.M., May 18, 1937. The minimum bid which will be accepted is $1.50 per acre. The land will be offered as a single unit. The successful bidder must deposit on the date of sale a certified check on a solvent bank, or cash, for one-fifth of the amount and file the showing of qualifications to receive a lease required by Section 7 of Circular 1386. The remainder of the bonus bid and the annual rental at the rate of $1.00 per acre must be paid prior to the issuance of the lease. The bidders are warned against violation of the provisions of Section 59 of the United States Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. Register.

Sd. 5,439-42 ft.; tstd. S.W.; drlg. 5,-521 ft.
Wellington Oil Co. No. 14 Sevier, 254.7-ac. tr., Wm. Gambel Sur. D.S.T. 5,425½-33 ft.; comp.; making wash wtr. and dist.; 1,600 lbs. T.P. and 1,800 lbs. C.P.

Flour Bluff—Nueces County

Humble O. & R. Co. et al No. 2 Cordz, Lot 13, Blk. 48. Drlg. sh. 5,163 ft.
Humble O. & R. Co. et al No. 2 Golden, Lot 19, Blk. 47. Drlg. sh. 4,460 ft.
Humble O. & R. Co. et al No. 3-A Miller, Lot 20, Blk. 56. Set csg. 6,667 ft.; comp; no gauge.
Humble O. & R. Co. No. 2-B Miller, Blk. 21, sec. 48. R.U.; (cor.).
Humble O. & R. Co. et al No. 4-A Miller, Lot 19, Blk. 56. Drlg. sh. 230 ft.
Humble O. & R. Co. et al No. 7 Phillips, Blk. 14, sec. 55. Set csg. 6,658 ft.; comp.; 121 B.P.D. on ¼-in. ck.
Humble O. & R. Co. et al No. 2-A Solar Sevier, Lot 14, Blk. 47. Drlg. sh. 5,-435 ft.
Humble O. & R. Co. et al No. 3 Webster, Blk. 26, sec. 48. Drlg. sh. 3,935 ft.
S. Paul No. 1 Moulter, Blk. 16, sec. 41, Encinal Garden tracts. Loc.

London—Nueces County

Cosner & Cosner No. 1 Stockton, 330 ft. N and E lines, SW¼, NE¼, sec. 25. Perf. 4,703-19 ft.; completing.
Crown Central Pet. Corp. No. 1 Stockton, 330 ft. S and E lines, NW¼, NE¼, sec. 25. Drlg. 1,145 ft.
Gem Oil Co. No. 1 Stockton, 330 ft. N and W lines, SE¼, NE¼, sec. 25. Sd. 4,551-56 ft.; tstd. S.W.; D.S.T. 4,716-23 ft.; rec. 250 ft. P.L.O.; set csg.; W.O.C.

Saxet Heights—Nueces County

W. C. Brady No. 1 Hartley, 4-ac. tr., Ellendale Gardens Subd. Cg. 4,063 ft.
Potter P. L. Co. No. 5 Cohen, 15-ac. tr., Villareal Sur. Drlg. 3,940 ft.
Potter & Snowden No. 2 Eden, Villareal Sur. Perf. 4,079-84 ft.; comp.; 200 B.P.D. on ¼-in. ck.
Ben F. Smith No. 1 Snowden, 13-ac. tr., Villareal Sur. R.U.
Taylor Pet. Corp. No. 2 Kaler, 10-ac. tr., Villareal Sur. Drlg. 2,010 ft.

Saxet—Nueces County

Baltic Drlg. Co. No. 4 Harmon, Sur. 416. Drlg. 427 ft.
Benson Drlg. Co. No. 1 Morgan, 330 ft. N and W lines, 40-ac. tr., Sur. 315 (W.O.). Old T.D. 4,483 ft.; R.U. to D.D.
Bentex Oil Co. No. 5 Harmon, 330 ft. S and W line, 50-ac. tr., Sur. 416. Rmg. 6,332 ft.
R. B. Bryant No. 6 Frank, Sur. 416. Drlg. 6,617 ft.
Conservative Oil Co. No. 3-B Morgan, Sur. 403. Oil sd. 6,914-28 ft.; set csg. 6,928 ft.; perf. 6,750 ft.; S.W.; perf. 4,048-52 ft.; recmtg.
A. D. Corgey No. 1 Page, 330 ft. S and E lines, 20-ac. tr., Sur. 716. Drlg. 6,235 ft.
Donico Prod. Co. No. 2 Dounigan, 330 ft. W line, 2,004 ft. S line, 80-ac. tr., sec. 7, Rge. 6, Kinney Lds. Sd. 4,854-60 ft.; set csg.; W.O.C.
Gilcrease Oil Co. No. 3 Gallagher, 140-ac. tr., Thos. Gallagher Sur. M.I.R.
L. Glasscock No. 2 Johns, 20-ac. tr., MacGregor Sur. 582. M.I.M.
L. Glasscock No. 3 Hunter, 990 ft. N line, 330 ft. W line, 160-ac. tr., Dunn Sur. 312. Perf. 4,860-63 ft.; comptg.; T.D. 6,-959 ft.
Tom Graham No. 3 Harmon, 20-ac. tr., Sur. 416. Drlg. 3,426 ft.
Great States Oil Co. and Violet Oil Corp. No. 7 McGregor-Belk, Sur. 311. D.S.T. 6,318-26 ft.; recd. 1,000 ft. oil, 90 ft. S.W.; sd. 6,208-26 ft.; set csg. 6,326 ft.; cleaning into pits.
Great States and Violet No. 9 McGregor-Belk, 73.6-ac. tr., sec. 311. M.I.M.
W. H. Harrison Drlg. Co. No. 1 Taggert, 50-ac. tr., Sur. 401. T.D. 5,160 ft.; S.D.; W.O.O.
Hiawatha Oil Co. No. 8 Hutchins-Stillwell, Lot 30, Sheppard Farm Lds. R.U. and S.D.
Hiawatha Oil Co. No. 9 Hutchins-Stillwell, Lot 34, Sheppard Lds. Perf. 5,762-68 ft.; made gas and dist.; drlg. 6,070 ft.
Houston Oil Co. No. 2 fee, Sur. 582. Cg. 4,326 ft.
Houston Oil Co. No. 21 Morgan, sec. 7, Rge. 5. Drlg. 4,068 ft.
Houston Oil Co. No. 22 Morgan, sec. 7, Rge. 5. Drk.
H. H. Howell No. 3 Hutchins, 80-ac. tr., Sur. 416. Sd. 6,271-92 ft.; perf. 6,270-75 ft.; fsg.
H. H. Howell No. 1 R. Morgan, Blk. 3, Roberts Subd., Sur. 415, Sat. sd. 6,735-42 ft.; set csg.; perf. 6,726-30 ft.; completing.
H. H. Howell No. 2 Morgan, Blk. 3, NW¼, Sur. 415. Drlg. 4,623 ft.
Kepley Prod. Co. No. 3 Donigan, 100-ac. tr., sec. 7, Rge. 5. Drlg. 1,897 ft.
Maryland Corp. No. 1 Carson, 7-ac. tr., Sur. 416. O.W.W.O.; old T.D. 5,843 ft.; sd. 6,288-6,308 ft.; odor gas and dist.; T.D., sh. 6,315 ft.
Morgan & Chapman Minerals No. 6 Morgan Clark, NE¼, Sur. 405. P.B. 3,500 ft.; to sdtrk.
Pan American Prod. Co. No. 5-C Morgan, E½, SW¼, Sur. 405. Set csg. 1,234 ft.; drlg. plugs.
Pan American Prod. Co. No. 2 Solar Sevier, Sur. 582. M.I.M.
Pan American Prod. Co. No. 4 Solar Sevier, 40-ac. tr., Sur. 582. Sd. 6,235-73 ft.; set csg. 6,273 ft.; perf. 6,269-72 ft.; comp.; no gauge.
Perry & Reed No. 1 fee, 30.4-ac. tr., Villareal Gr. Drlg. 6,639 ft.
Phillips Pet. Co. No. 5 Hutchins, 60-ac. tr., Blks. 29 and 30, Sheppard Farm Lots (W.O.). Oil sd. 6,891-6,901 ft.; perf. 6,893-99 ft.; comp.; 92 B.P.D. on ¼-in. ck.
Potter & Snowden No. 1 Kocurek, 26-ac. tr., Sur. 25. Set condr. csg.; W.O.C.
Potter & Snowden No. 1 Taggert, Blk. 5, Sur. 401. M.I.M.
Republic Nat. Gas Co. No. 3-A Morgan, sec. 405. Drlg. 1,780 ft.
Richardson Pet. Co. No. 7 Cain & Secrist, Blk. 23, Russell Farm Lots. Drlg. 2,-217 ft.
Richardson Pet. Co. No. 9 Cain & Secrist, Blk. 23, Russell Farm Lots. Drlg. 3,-127 ft.
Richardson Pet. Co. No. 3 Erigan, 10-ac. tr., Sur. 311. Drlg. 3,116 ft.
Richardson Pet. Co. No. 1 Erwin, 5.8-ac. tr., Sur. 500. Drlg. 4,623 ft.
Richardson Pet. Co. No. 9 Quiros, Blk. 36, Sheppard Lots. Drlg. 5,026 ft.
Southern Minerals Corp. No. 20 Bliss, 120-ac. tr., Sur. 416. Drk.
Southern Minerals Corp. No. 5 Mastin, Sur. 416. Sd. 6,887-97 ft.; D.S.T. 6,907-21 ft.; rec. 1,500 ft. P.L.O. in 15 min.; set csg.; rng., screen.
Southern Minerals Corp. No. 13 Smith, Blk. 4, Sheppard Trs. Drlg. 4,392 ft.
Stamex O. & G. Co. No. 1 Cox & Cryder, lse., Surs. 166 and 316. O.W.W.O.; old T.D. 4,643 ft.; P.B. to sdtrk. 2,500 ft.
Texon Drlg. Co. No. 5 Vance, Thos. Gallagher Sur. T.D. 7,000 ft.; sdtrkd. 6,-400 ft.; cg. 6,617 ft.

Stratton—Nueces County

Camp Prod. Co. No. 1 Wordner, 330 ft. E line, 1,280 ft. N line, sec. 12, Stratton Subd. Cg. 5,713 ft.

Sullivan—Nueces County

Invincible Oil Co. No. 1-B Elliff, 406 ft. S and W lines, 160-ac. tr., Longorio Gr. Drlg. 3,007 ft.
L. M. Lockhart No. 1 Purl, Lot 2, sec. 7, Peters Subd. No. 2. Loc.

Plymouth—San Patricio County

Magnolia Pet. Co. No. 5 Corpus Christi Bank, sec. 24, Fourth Addn. Drlg. 2,-016 ft.
Magnolia Pet. Co. No. 12 C. C. Bank, 466 ft. N and E lines, Fessenden Sur. Drlg. 4,020 ft.
Plymouth Oil Co. No. 65-C Welder, sec. 71. T.D. 6,993 ft.; D.&A.
Plymouth Oil Co. No. 70-C Welder, sec. 71. T.D. 5,643 ft.; set csg.; W.O.C.
Plymouth Oil Co. No. 72-C Welder, 8,411 ft. S line, 797 ft. E line, sec. 71. Sd. 5,602-19 ft.; set csg.; W.O.C.
Stanolind O. & G. Co. No. 2 C. C. Banks, sec. 24, Fourth Addn. T.D. 5,922 ft.; D.&A.

Taft Field—San Patricio County

Cage Prod. Co. No. 7 Mayo, 9,560 ft. W line, 990 ft. S line, 60-ac. tr., Ottman Sur. R.U.
Conroe Drlg. Co. No. 8 Pullin, 40-ac. tr., Wm. Burns Sur. Sd. 4,355-66 ft.; comp.; 150.46 B.P.D. on ⅞-in. ck.
Esves Oil Co. No. 4 Britton, Lot 8, sec. 6, Third Addn. Set csg. 4,008 ft.; S.D.
Esves Oil Co. No. 6 Britton, Lot 8, sec. 6, Second Addn. Sd. 4,917½-23 ft.; comp.; 120 B.P.D. on 5/32-in. ck.
Humble O. & R. Co. No. 1 Blaschke & Mayo, Lot 8, sec. 25. Drlg. sh. 5,889 ft.
Humble O. & R. Co. No. 17 Mayo, Ottman Sur. T.D. 4,923 ft.; comp.; 140.11 B.P.D. on 9/64-in. ck.
Humble O. & R. Co. No. 19 Mayo, Ottman Sur. Set csg. 4,929 ft.; W.O.C.
Shell Pet. Corp. No. 6 Pullin, sec. 1, Second Addn. R.U.

Ricaby—Starr County

Dodd, Tr., No. 1 Wood Est., C Porc. 84, J. of Camargo. Sd. 1,719-35 ft.; blew out; comp.; est. 45 B.P.H. on ⅞-in. ck.
Moss & Heard No. 3 Ricaby, Porc. 83, J. of Camargo. Sd. 1,604-11 ft.; tstd. oil and mud; set csg. 1,602 ft.; W.O.C.

Barbacoas—Starr County

K. E. Merren et al No. 1 S.C.C.C., Blk. 34, Porc. 89. T.D. 5,380½ ft.; sd. 5,377-80½ ft.; high pressure; killing well.

Los Olmos—Starr County

H. C. Owens No. 1 Ivey, Porc. 87. R.U.
St. Marys O. & G. Co. No. 1 Seabury, Porc. 87. T.D. 1,017 ft.; D.&A.
Ted Stone No. 1 Kelsey-Bass, Porc. 87, J. of Camargo. Set 6-in. csg. 393 ft.; S.D.

Rio Grande City—Starr County

Clopton & Reed No. 1 Green, Porc. 80. T.D. 4,600 ft.; S.G.; P.B. 1,681 ft.; set csg.; W.O.C.
Clopton & Reed No. 4 Tijerina, Lot 12, Sh. 14-C, Porc. 80. Cg. 1,423 ft.

Aviator—Webb County

Joe Palmer No. 1 Garcia, Sur. 463. R.U.

Cole—Webb County

Cole Pet. Co. No. 99 Benavides, Blk. 10, Sur. 412. T.D. 3,464 ft.; D.&A.
O. W. Killam No. 49 Bruni, Blk. 5, Sur. 3. T.D. 2,958 ft.; tstd. oil.
O. W. Killam No. 50 Bruni, C Blk. 10, Sur. 8, Foltz Subd. Fsg. 3,170 ft.

O'Hern—Webb County

Hamil & Smith No. 4-A Benavides, Sur. 585. Drlg. 846 ft.
Hamil & Smith No. 25 Benavides, Blk. 501. D.&A. 2,954 ft.
Hamil & Smith No. 2 Bruni, Sur. 2213. Set csg. on sd. 2,936 ft.; W.O.C.
O. W. Killam No. 50 Bruni, C Blk. 10, Sur. 8. Sd. 2,448-55 ft.; tstd. oil, gas and S.W.
Magnolia Pet. Co. No. 19 Benavides, Hale Subd. Drk.
Magnolia Pet. Co. No. 23 Benavides, Blk. 1, O'Hern & Seacord Subd. Drlg. 2,-377 ft.
J. J. O'Hern No. 1-C Benavides, Hale Subd. T.D. 2,847 ft.; comp.; 300 B.P.D.
H. M. Reed No. 4 Benavides, Blk. 299, Hale Subd. Swbg. 2,916 ft.
Starr Dev. Co. No. 1 Benavides, 330 ft. N and W lines, Sur. 173. M.I.M.
Sun Oil Co. No. 6-A Benavides, Blk. 377. Drlg. 1,220 ft.
Texas Co. No. 5-A Benavides, Blk. 375. Comptg.; T.D. 2,913 ft.; swbg. oil and S.W.

LaSal Vieja—Willacy County

Shell Pet. Corp. No. 1 Yturria, Sh. 64, Carricitos Gr. (W.O.); set csg. 7,630 ft.; T.D. 7,870 ft.

Byersville—Williamson County

Taylor Ref. Co. No. 7-B Heap, H. White Sur. Spudded.

Charco Redondo—Zapata County

W. C. Bob No. 2 Martinez, S¼, Blk. 22, Quandado Gr. Sd. 670-72 ft.; set csg.; M.I.R.

Cuellar—Zapata County

Magnolia Pet. Co. No. 5 Cuellar, Sur. 245. Set sur. csg.; W.O.C.
Magnolia Pet. Co. No. 1 Gonzalez, Cerrito Blanco Gr. Sd. 1,100-16 ft.; comp.; gasr.
Magnolia Pet. Co. No. 2 Gonzalez, Cerrito Blanco Gr. Spudded.

Escobas—Zapata County

Allied O. & G. Co. No. 6 Santos, Sh. 6, Fansler Part. Loc.
E. Calloway No. 2 Bustamente, Sh. 35, Fansler Part. Cg. 1,123 ft.
E. Calloway No. 4 Santos, Sh. 7, Fansler Part. Comp.; no gauge.
E. Calloway No. 5 Garcia, Sh. 3, Fansler Part. Completing 1,043 ft.
Texas Co. No. 97 Jennings, Cerrito Blanco Gr. D.&A. 1,617 ft.
Zapata Corp. No. 1 Garza, Blk. 22, Douglas Subd. Cg. 1,223 ft.
Zapata Corp. No. 13 Garza, Blk. 22, Douglas Subd. D.&A. 1,523 ft.

Haynes—Zapata County

Magnolia Pet. Co. No. 24 Haynes, Blk. 7, Haynes Subd. Comp.; 40 B.P.D.; T.D. 1,137 ft.
Magnolia Pet. Co. No. 29 Haynes, Blk. 7, Haynes Subd. D.&A. 1,283 ft.
Magnolia Pet. Co. No. 33 Haynes, Blk. 7, Haynes Subd. D.&A. 1,138 ft.
Valley Osage Oil Co. No. 5 Haynes, Blk. 14, Haynes Subd. Comp.; 35 B.P.D.; T.D. 1,138 ft.
Valley Osage Oil Co. No. 6 Haynes, Blk. 14, Haynes Subd. Comp.; 30 B.P.D.; T.D. 1,155 ft.

Lopena—Zapata County

Dalport Oil Corp. No. 1 Vela, Porc. 20. Drlg. 312 ft.
Venture Pet. Co. No. 2 Ramerez, Blk. 3, Porc. 18. Loc.
Wm. H. Winn No. 2 Vela, Blk. 6, Porc. 20. Cg. 2,221 ft.

E. C. TEXAS WILDCATS

Anderson County

American Liberty Oil Co. No. 1 G. E. Gauge, Blackfoot area, B. Gilbert Sur. Top Paluxy 6,758 ft.; top Glenrose 7,029 ft.; drlg. 7,563 ft.
Tide Water Oil Co. et al No. 7 Monnig, S. Sanchez Sur., deep test, Long Lake field. Coring 8,660 ft.

Angelina County

Hicks et al No. 1 Morris, J. Morris Sur., 3 mi. E of Dibol. S.D. 2,186 ft.
B. F. Hoffman No. 1 So. Pine Lbr. Co., B. J. Thompson Sur., C of SE¼ of Blk. 11, NE of Dibol. Fsg. 2,236 ft.
W. Sandler No. 1 B. L. Collins, 150 ft. S and 425 ft. W of D. W. Welch Sur. Drlg. 1,500 ft.

Bowie County

Thompson & Jaffie No. 1 R. Rosalind, J. Milam Sur., 3 mi. SW of Redwater. Drk.

Cherokee County

J. G. Mayo Oil Co. No. 1 J. E. Bailey in J. H. Russell Sur., 2½ mi. W of Lone Star. Spudded.
A. F. Richardson No. 1 F. P. O'Brien, G. S. Clapp Sur., 3 mi. NW of Rusk; 5,000-ft. test. Loc.

Dallas County

Mauldin Oil Co. No. 1 W. E. Howell, S. Layton Sur., 8 mi. E of Grapevine, 6 mi. W of Longmire. S.D.

Falls County

H. H. Bell et al No. 1 A. Garrett, J. M. Sanches Sur. M.I.R.
A. H. Bell et al No. 1 C. L. Trice, F. Mayham Sur., 1 mi. E of Lott. S.D. 1,220 ft.

Fannin County

Joiner & Owens No. 1 Goss-Morgan, J. Stephens Sur., 16 mi. N of Honey Grove. S.D. 2,810 ft.

Freestone County

C. F. Lytle No. 1 R. Simmons, 23-ac. tr., R. B. Loughbotham Sur., 1 mi. S of Wortham. R.U.
Stroude et al No. 1 P. Mullens, R. D. Sloan Sur., 6 mi. NE of Fairfield. Spudded.

Henderson County

Tide Water et al No. 1 McElreath & Suggett. Austin 3,710-4,110 ft.; top Woodbine 4,137 ft.; top Georgetown 4,990 ft.; top Paluxy 6,005 ft.; coring 6,078 ft.

Hopkins County

W. P. Chandler et al No. 1 J. M. Hargroves, 330 ft. S and W of 20-ac. lse. in G. Linceum Sur., 10 mi. SW of Sulphur Bluff. Loc.
Rio Oil Co. No. 1 R. A. Logan, A. Wetmore Sur. Loc.

Houston County

American Liberty Oil Co. No. 1 Bean, A. Evans Sur., NW of Grapeland. Tstg. csg. 6,304 ft.
Placid Oil Co. No. 1 Elliott in J. Procella Sur., 5½ mi. NE of Grapeland. Coring 5,935 ft. on D.S.T. made 5 joints oil and 20 joints of S.W.

Hunt County

Penn Oil Corp. No. 1 R. B. Parish, C 100-ac. tr., N. Dauley Sur., 7 mi. NE of Lone Oak. W.O.C. 350 ft.
Texola Land Corp. No. 1 J. M. Goin, Jas. Merrick Sur., 2 mi. SW of Wolfe City. S.D. 40 ft.

Kaufman County

Scott & Woodside No. 1 W. and T. Nash, in J. Cortez Sur., 1 mi. E of Scurry. M.I.R.

Lamar County

Lowery-Cutler No. 1 E. C. Porter, Thos. King Sur. Top Georgetown 354 ft.; S.D. 1,647 ft.

Limestone County

A. W. Phillips et al No. 1 E. M. Speight, M. Herrin Sur., 6½ mi. SE of Mexia. S.D. 3,695 ft.
Pure Oil Co. No. 16-T Kendrick, P. Varella Sur., Mexia field. S.D. 405 ft.

Red River County

Carpenter Oil Corp. No. 1 J. M. Roberts, J. Ware Sur., 10 mi. NE of Clarksville. S.D. 1,180 ft.
Roy I. Carter Drlg. Co. No. 1 J. A. Tutt, C 40-ac. tr. in D. Hart Sur., 2 mi. S of Avery. S.D. 400 ft.

Robertson County

J. E. Mills No. 1 T. Congelosi, G. A. Nixon Sur., 3½ mi. SW of Hearne. Loc.

Van Zandt County

Branch et al No. 1 P. A. Griffiths, 8,500 ft. SE and 1,000 ft. SW of F. Johnson Sur., 3 mi. SW of Crockett. S.D. 1,740 ft.
Humble O. & R. Co. No. 1 L. K. Riggs, W. Daniels Sur. Deep test; top Woodbine 3,230 ft.; top Georgetown 3,725 ft.; drlg. 3,750 ft.
Stroud & Lowe No. 1 P. L. McNeill, J. W. Guest Sur., 4 mi. N of Ben Wheeler. Drlg. 215 ft.

Wood County

B. F. Phillips No. 1 L. E. Pritchard, T. Craddock Sur., 4 mi. S of Winnsboro, Pecan Gap 2,836-3,080 ft.; drlg. 4,450 ft.

EAST TEXAS

(Border Counties)

Bowie County

Ferguson & Hill No. 1 Breckenridge, N. Dysas Sur. Drlg. 2,780 ft.; no report.
Sutton-Hawkins No. 1 McDuffey, John Ball Sur. Drlg. 3,980 ft.; no report.

Cass County

American Liberty No. 1 B. E. Echlos, H. Holbert Sur. Drlg. 3,850 ft.
Gulf Oil No. 4 Dawson, J. H. Rives Sur., NW cor ise. Cmtd. 7-in. 6,005 ft.; T.D. 6,006 ft.; W.O.C.S.
P. L. Hoffman No. 3 Davis, J. S. Smith Sur. Drlg. 1,840 ft.
Magnolia No. 3 Allday Est., P. Evans Sur. Drlg. 4,445 ft.
Magnolia No. 11 J. E. George, John Collum Sur. Drlg. 2,395 ft.
Magnolia No. 13 J. E. George, John Collum Sur. Drlg. 1,525 ft.
Magnolia Pet. No. 3 W. M. Hall, Wilson Robinson Sur. Drk.
Magnolia No. 1 Haver & Thatcher, Jacob Carsner Sur. Drlg. 4,643 ft.
Magnolia No. 9 L. Haywood, P. Evans Sur., SE cor. Drlg. 4,450 ft.
Magnolia No. 10 L. Haywood, SW cor. lse., P. Evans Sur. Drlg. 4,628 ft.
Magnolia No. 11 L. Haywood, SE cor. P. Evans Sur. Drlg. 3,985 ft.
Magnolia Pet. Co. No. 12 L. Haywood, P. Evans Sur. Drlg. 3,690 ft.
Magnolia Pet. Co. No. 13 L. Haywood, P. Evans Sur. Drlg. 3,520 ft.
Magnolia Pet. Co. No. 5 Lewis and Wicks, Tstg.; swbg.; T.D. 6,080 ft.
Magnolia Pet. Co. No. 8 Lewis and Wicks, Alex Archer Sur. Drlg. 5,164 ft.
Magnolia Pet. Co. No. 1 J. B. McLeod, Cass Co. Sch. Ld. Sur., NW cor. sur. Loc.
R. W. Norton No. 1 Davis, H. Holbert Sur. Comp.; flw. 314 B.P.D.; T.D. 6,022 ft.
R. W. Norton No. 2 Davis, H. Holbert Sur., NE cor. 6-in. cmtd. 5,984 ft.; T.D. 6,000 ft.; W.O.C.S.
R. W. Norton No. 3 Davis, H. Holbert Sur. Drlg. 5,565 ft.
Ohio Oil Co No. 13 R. P. Willis, S.F.I.W. Sur. No. 1,263. Drk.
Ohio Oil Co. No. 16 R. P. Willis, S.F.I.W. Sur. 1263. Rng. 7-in.; T.D. 5,968 ft.
Ohio Oil Co. No. 17 R. P. Willis, S.F.I.W. Sur. No. 1263. Drlg. 5,100 ft.
Phillips Pet. Co. No. 8 Farrier, Wm. R. Myers Sur. 7-in. cmtd. 6,076 ft.; T.D. 6,088 ft.; W.O.C.S.
Texas Co. No. 8 McLeod, W. A. Elliott Sur. Drlg. 5,580 ft.
Texas Co. No. 2 N. A. Rambo, Cass Co. Sch. Ld. Sur. Drlg. 5,221 ft.
Texas Co. No. 5 N. A. Rambo, Cass Co. Sch. Ld. Sur. Drlg. 6,046 ft.
Texas Co. No. 7 N. A. Rambo, Cass Co. Sch. Ld. Sur. Drlg. 4,256 ft.
United Prod. Co. No. 1 Allday, P. Evans Sur. Drlg. 3,476 ft.
United Prod. No. 1 Belote, H. Holbert Sur. Drlg. 2,460 ft.
United Prod. No. 1 Bivens, John Collum Sur. Drlg. 3,306 ft.
United Prod. Co. No. 2 Bivens Unit, Jas. Davenport Sur. T.D. 6,021 ft.; S.D. W.O.
United Gas No. 3-A J. A. Bewley, H. Holbert Sur. 13-in. cmtd. 240 ft.; W.O.C.S.
United Prod. No. 4 J. A. Bewley, H. Holbert Sur. 7-in. cmtd. 5,960 ft.; T.D. 6,000 ft.
United Prod. No. 6 G. W. Bibby Unit,

Alex Archer Sur. Comp.; flw. 11 B.P.H.; T.D. 6,050 ft.
United Prod. Co. No. 1 Bostick, J. Coleman Sur. T.D. 5,684 ft.; tstg. gas well.
United Prod. No. 1 J. Q. Clements, Wm. B. Hughes Sur. Comp.; flw. 8 B.P.H.; T.D. 6,080 ft.
United Prod. Co. No. 1 Davis Unit, Cass Co. Sch. Ld. T.D. 5,732 ft.; acidizing.
United Gas No. 4 Bivens Unit, J. Davenport Sur. 7-in. cmtd. 5,979 ft.; W.O.C.S.
United Prod. Co. No. 1 Kate Spell Unit, C. C. Sch. Ld. Sur. Drlg. 1,450 ft.
United Prod. Co. No. 1 J. W. Land, R. Potter Sur. Cg. 6,564 ft.
United Prod. No. 1 R. O. Long, W. Robinson Sur. Drlg. 4,501 ft.
United Prod. Co. No. 1 J. D. Parker, J Coleman Sur. T.D. 5,695 ft.; tstg.; gas well.
United Prod. No. 1 Terry Unit, R. Potter Sur. 7-in. cmtd. 5,600 ft.; T.D. 5,660 ft.; W.O.C.S.
United Prod. No. 4 S. B. Willis, W. Robinson Sur. 7-in. cmtd. 6,000 ft.; T.D. 6,035 ft.; W.O.C.S.
United Prod. No. 5 S. B. Willis, W. Robinson Sur. 7-in. cmtd. 6,004 ft.; T.D. 6,025 ft.; W.O.C.S.
Vaughn Prod. Co. No. 1 Willis, S.F.I.W. Sur. 1263. Drlg. 3,450 ft.

Harrison County

H. H. Alvord et al No. 1 M. A. Flannagan, L. Wormack Sur. T.D. 2,440 ft.; W.O. S.R.
Midfield Oil Co. No. 1 Lane & Greer, Baker Sur. T.D. 2,336 ft.; pmpg. on test.

Marion County

Arkansas-La. No. 1 W. S. Ford, Charles Grayson Sur., NE cor. Ford 204-ac. tr. T.D. 6,181 ft.; tstg.
Arkansas-La. No. 1 Laura McIntosh, Edmondson Sur. 7-in. cmtd. 5,952 ft.; T.D. 6,101 ft.; W.O.C.S.
Bauman, Dunn & Fischer No. 1 Chatten, A. D. S. Coy Sur., SE cor. T.D. 5,941 ft.; gas and dist.; tstg.
Cemo Oil Co. No. 1 Lucas, A. Castleberry Sur., Caddo field. Drk.
Holcomb & Thomason No. 1 Lizzie Henderson, 330 ft. S and E, cor. Blk. 18, of Lizzie Henderson Subd., or 2,800 ft. S, 3,450 ft. E of NW cor. of R. Bennington Sur. T.D. 5,996 ft.; tstg.
Hunter Co. No. 1 E. W. Fonda, A. D. S. Coy Sur. Drk.

Panola County

Danciger O. & R. No. 1 Tatum, A. Bissell Sur. R.U.
R. H. Dearing & Sons No. 1 Wooten Est., W. Mann Sur. Drk.
Magnolia Pet. Co. No. 2 E. A. Hull, Thos. Applewhite Sur. Drlg. 1,500 ft.
Matex Oil Co. No. 1 Thomas M. Alstone, 3 mi. E of Elysian field. Cg. 5,710 ft.

Shelby County

Mulroy-Curtain et al No. 1 Hayden, D. G. Yordt Sur. T.D. 3,200 ft.; S.D.; W.O.; (cor.).
Wm. Redditt No. 1 Pickering Lbr. Co., SE cor. Stephens English Sur. S.D. 2,165 ft.; laying fuel line and prep. to D.D.
H. A. Stebbinger No. 1 Pickering Lbr. Co., on 160-ac. tr. in A. Hanson Sur. T.D. 5,041 ft.; (cor. depth); drlg. plug and prep. test shows oil and gas; fsg. for D.S.

WEST TEXAS WILDCATS

Andrews County

Botkins & Barron No. 1 Kemp. Drk.
M. S. Forgeron et al No. 1 Lockhart & Brown, C NE¼ sec. 20, Blk. A-41, P.S.L. Sur. Loc.
G. F. Getty, Inc., No. 1 R. H. Lindley, sec. 8, Blk. A-46. T.D. 4,642 ft.; pumping 25 bbls. fluid—oil and water.
Geo. F. Getty No. 1 Moxley. T.D. 4,802 ft. P.B. to 4,792 ft.; testing.
Landreth Prod. Co. No. 1 L. Jones, 660 ft. from N and 990 ft. from E, sec. 11, Blk. A-42, P.S.L. Sur. Loc.
Hanagan No. 1 Lotus Oil Co., sec. 18, Blk. A-48, P.S.L. Sur. Coring 4,602 ft.
Humble O. & R. Co. No. 1-B Means, sec. 11, Blk. A-45. Coring 5,200 ft.
Standard of Texas No. 1 Gray Estate, sec. 21, Blk. A-42, P.S.L. Sur. Drlg. 1,400 ft.

Bailey County

E. L. Wilson et al No. 1 Blank, Labour 4, Abner Taylor League 700. Loc.

Brewster County

F. C. Dodson No. 1 Texas American Synd., sec. 66, Blk. 10, G.H.&S.A. Sur. T.D. 3,992 ft.; ran csg.

Cochran County

Bond & Harrison No. 1 Dean, Labour 1, League 85, Greer Co. School Lands. Brown lime 3,760 ft.; drlg. 3,900 ft.
Pete Wiggins et al No. 1 C. Slaughter Dean, C Lab. 26, League 92, Lipscomb Co. School Ld. Loc.

Coke County

H. E. Ogden et al No. 1 Rawlins. Cellar.
Plymouth Oil Co. No. 1 Mrs. Mary Hanna, sec. 252, Blk. LA, H.&T.C. Sur., 1½ mi. SW of Blackwell. Drlg. 212 ft.

Crane County

Gulf Oil Corp. No. 2 McKnight, sec. 9, Blk. B-21. T.D. 4,406 ft.; U.R. csg.
Sinclair Prairie Oil Co. No. 1 University, sec. 13, Blk. 35. Drlg. 3,200 ft.

Crockett County

Choate & Hogan No. 1 C. B. Haun, sec. 88, Blk. 1, I.&G.N. Sur. Loc.
Superior Oil Co. of Calif. No. 1 J. S. Todd, C SE¼ sec. 55, Blk. UV, G.C.&S.F. Sur. T.D. 545 ft.; Drlg. 1,172 ft.

Ector County

Bond & Harrison No. 1 Rumsey, sec. 35, Blk. 45, Twp. 1n, T.&P. Sur. T.D. 4,265 ft.; shot; S.D.
Sinclair Prairie Oil Co. No. 2-A Johnson, sec. 48, Blk. 43, Twp. 1s, T.&P. Sur. T.D. 4,345 ft.; P.B. 4,173 ft.; tstg.

Edwards County

Dan Auld et al No. 1 Rigsby, sec. 16, Blk. OK, G.C.&S.F. Sur., 15 mi. NE of Rock Springs. Drlg. 722 ft.

Fisher County

L. A. Daniels et al No. 1 J. J. Nickless. T.D. 2,907 ft.; set csg.
Forrest Dev. Co. No. 1 J. A. Scott, sec. 105, Blk. 2, H.&T.C. Sur. Drlg. 3,570 ft.
Martin & Brubaker No. 1 Brown, W. E. Richardson Sur., sec. 4, Blk. R. T.D. 2,880 ft.; U.R. csg.
Southern Oil Co. No. 1 Robinson, sec. 172, Blk. 2, H.&T.C. Sur., 2½ mi. NE of Raton. S.D. 2,940 ft.

Gaines County

A. G. Carter No. 1 A. L. Wasson et al, sec. 48, Blk. AX, P.S.L. Sur. Drlg. 1,623 ft.
R. H. Gill No. 1 P. W. Dolmont, C of NE of SE¼, sec. 5, Blk. A-22, P.S.L. Sur. Loc.
Landreth Prod. Co. No. 1 C. Cobb, sec. 20, Blk. A-21. Drlg. 4,914 ft.
T. N. Sloan et al No. 1 Barber, NE cor. sec. 19, Blk. A-28. P.S.L. Sur. Loc.

Garza County

S. Caprito No. 1 Post Estate, sec. 230, Blk. 5, K. Aycock Sur. Drlg. 2,585 ft.

Glasscock County

Fleetborn Oil Co. No. 1 Black Arrow, sec. 3, Blk. 34, Twp. 3s, T.&P. Sur. T.D. 2,713 ft.; no results from shot.

Hockley County

Texas Co. No. 1 B. Slaughter, Labour 83, League 38, Zavala Co. Sch Lds. T.D. 5,022 ft.; S.I. for storage; flowed 20 to 30 bbls. in eight minutes.

Howard County

Moore Bros. No. 1 T.&P. Land Trust, sec. 33, Blk. 30, Twp. 1s, T.&P. Sur. Drlg. 1,432 ft.
Shasta Oil Co. No. 1 Cora Echols, sec. 5, Blk. 15, T.&P. Sur. Drlg. 1,549 ft.
R. A. Westbrook et al No. 1 G. T. West, sec. 48, Blk. 33, Twp. 1n, T.&P. Sur. S.D. 1,460 ft.; flowing air and salt wtr.; rebldg .drk.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp. 6. T.D. 3,000 ft.; U.R. 7-in. csg.

Jones County

T. K. Simmons No. 1 E. A. Hicks, sec. 5, O. A. Lands Sur. Drlg. 2,232 ft.
Ungren & Frazier No. 1 J. J. Steele, sec. 11, Blk. 15, T.&P. Sur. T.D. 2,487 ft.; P.B. to 2,225 ft.; to acidize.

Loving County

Finley et al No. 1 W. D. Johnson, 2,310 ft. from S and 990 ft. from E. sec. 24, Blk. 56, Twp. 1, T.&P. Sur. M.I.M.
Mason Oil Co. No. 3 Kyle, sec. 20, Blk. 55, Twp. 1, T.&P. Sur. Drlg. 2,409 ft.
Stanolind O. & G. Co. No. 1 M. Kyle, sec. 20, Blk. 55, Twp. 1, T.&P. Sur. R.U.R.

Mitchell County

Mitchell O. & G. Co. No. 1 Z. Morrison, 330 ft. from S and 2,310 ft. from W, sec. 36, Blk. 29, Twp. 1n, T.&P. Sur. Loc.

Pecos County

Adams & Black No. 1 Masterson, sec. 71, Blk. 10, H.&G.N. Sur. Drlg. 363 ft.
Bahan & Rhodes No. 1-B Bonebrake, sec. 116, Blk. 8, H.&G.N. Sur. S.D. 2,290 ft.
Cannon & Cannon No. 1 University, 990 ft. from N and 2,310 ft. from E. sec. 2, Blk. 20. Loc.
Dobbs No. 1 University, 660 ft. from S and W, sec. 30, Blk. 18. Loc.
Hightower Oil Corp. No. 1 Holmes, sec. 6, Blk. C-3, E.L.R.R. Sur. S.D. 2,633 ft.
Humble O. & R. Co. No. 1 E. M. Gray, sec. 94, Blk 11, G.H.&S.A. Sur.; 5,000-ft. test. Drlg. 2,766 ft.
Humble O. & R. Co. No. 1 Tippett, sec. 537, T.I.&M. Sur. T.D. 600 ft.; U.R. csg.
E. R. Minshall No. 1 Banker, sec. 25, Blk. 146, T.&St.L. Sur. T.D. 3,005 ft.; P.B. to 2,974 ft.; shot: gas; fsg.
Pinerock Oil Co. No. 1 White & Baker, SE cor. sec. 5, Blk. 207, T.C. Sur. S.D. 640 ft.
Tex-Mex Pet. Co. No. 1 White & Baker, 330 ft. from S and 2,310 ft. from E, sec. 2, Blk. 179, T.C.R.R. Sur. Drlg. 750 ft.
S. Thompson No. 1 Elsinore Cattle Co., sec. 54, Blk. D, G.C.&S.F. Sur. W.O.C. 4,900 ft.
Trans-Pecos Oil Co. No. 1 Gallagher, sec. 9-51-10, T.&P. Sur. S.D. 1,280 ft.
Union Oil & Mining Co. No. 1-A Magnolia, sec. 5, Blk. 9, H.&G.N. Sur. S.D. 1,850 ft.; testing on pump.
Young No. 1 Bailey, sec. 23, Blk. 178, T.C. R.R. Sur. Drlg. 2,110 ft.
Young No. 1 Perry. Drlg. 227 ft.

Presidio County

L. C. Brite No. 4 fee, C NW¼ sec. 113, Blk. 12, G.H.&S.A. Sur. Drlg. 931 ft.
A. H. Main No. 1 Greenlee, sec. 40. Blk. 347, 13 mi. NE of Marfa. Drlg. 666 ft.

Reagan County

Bahan & Rhodes No. 1 Kloh, sec. 37, Blk. 37, Twp. 5s, T. & P. Sur., NW cor. of county. Drlg. 3,234 ft.
O. B. Greathouse No. 1 W. E. Friend, sec. 3, W. Allen Sur. Cellar.

Reeves County

Grisham & Hunter No. 1 Montgomery, sec. 1, W. R. King Sur. Coring 3,650 ft.
J. C. Hill et al No. 1 Ely, sec. 38, Blk. 71, P.S.L. Sur. Cellar.

Runnels County

Price & Kramer No. 1 Giesecke, 10,064 ft. from N and 3,939 ft. from E of Blk. 227, Hughes Sur. R.U.S.T.
Stevens & Glover No. 1 Fowler, sec. 150, E.T.R.R. Sur., 2 mi. NE of Ballinger. R.U.

Schleicher County

J. M. Cooper No. 2 B. Page, sec. 40, Blk. L, G.H.&S.A. Sur. M.I.T.
Mangus Oil Co. No. 1 Judkins & Spencer, C SW¼ sec. 4, W. W. Russell, grantee. Elev. 2,209 ft.; T.D. 6,527 ft.; P.B. 5,912 ft.; C.O.

Scurry County

Bristow & Cantrell No. 1 Tomlinson, sec. 122, Blk. 97, H.&T. Sur. Drlg. 1,765 ft.
E. L. Goos No. 1 Henderson, sec. 148, Blk. 97, H.&T.C. Sur. M.I.M.

Upton County

Amerada Pet. Corp. No. 5 Lane, sec. 32, Blk. 1, M.K.&T. Sur. T.D. 2,008 ft.; reaming

Ward County

Magnolia Pet. Co. No. 1-55 Sealy, sec. 55, Blk. F, G.M.M.B.&A. Sur. R.U.S.T. 2,618 ft.
L. F. White et al No. 1 Rector-Monroe, E cor. sec. 3, Blk. 1, W.&N.W. Sur. Drlg. 2,778 ft.

Winkler County

Richardson No. 1-B Walton, sec. 20, Blk. 77, P.S.L. Sur. Drlg. 2,703 ft.
York & Harper et al No. 1 Gunter & Munson, sec. 7, Blk. C, G.M.M.B&A. Sur. Drlg. 4,256 ft.

Yoakum County

Bahan et al No. 1 Shook Est., sec. 420, Blk. D, John H. Gibson Sur. Spudded and S.D. to R.U.R.
Magnolia Pet. Co. No. 1 Mrs. M. E. Taylor, sec. 201, Blk. D, John H. Gibson Sur. R.U.R.

RANGER (CENTRAL TEXAS) DISTRICT

Brown County

J. L. McMurray Hrs. No. 1 Edington, 3 mi. S Cross Cut, 220 ft. from N, 2,123 ft. from E., R. G. Milliken Sur. A-618. Rig up.
R. M. Ragsdale et al No. 1 J. H. Taber, 10 mi. NE Thrifty, sec. 87, H.T.&B. Sur., Abst. 437. Loc.

Callahan County

A. R. Forster No. 1 C. B. Snyder, NW cor. NE¼ county, sec. 139, B.B.B.&C. Sur. Sand 1,070-75 ft.; U.R. 6-in.

Coleman County

Midfield Oil Co. No. 1 T. H. Ward, sec. 274, W. Echels Sur. S.D.O. 1,500 ft.

Eastland County

J. T. Anderson No. 1 Crist, 8 mi. N of Rising Star, sec. 36, Lavaca Co. Sch. Lds. U.R. 12-in. to 735 ft.
J. A. Bearman et al No. 1 Mrs. R. L. Poe, S edge Cisco, sec. 79, H.&T.C. Sur., Blk. 4. Drlg. 845 ft.
Barnett Pet. Corp. No. 1 L. C. Downtain, 2 mi. SE Eastland, sec. 2, E.T.R.R. Sur., Blk. 6. Loc. for 2,500-ft. test.
F. J. Estes No. 1 Gentry, A. Popejoy Sur. Drlg. 3,187 ft.
Hoffman & Page No. 1 Dodd, 5 mi. S of Ranger, Subd. 11, William VanNorman Sur. Drlg. 2,030 ft.
States Oil Corp. No. 1 H. S. Schmick, 1 mi. NE Eastland, SE¼ sec. 1, H.&T.C. Sur., Blk. 4. Drlg. 1,625 ft.

Jones County

Fain & McGaha Oil Corp. No. 1 Hayden B, Subd. 4, G. Martinez No. 195, 220 ft. from S&E of Subd. Loc.
Fain & McGaha Oil Corp. No. 1 Lewis, 5½ mi. NE Hawley, sec. 37, T.&P. Sur., Blk. 15. Drlg. 1,600 ft.
Fain & McGaha Oil Corp. No. 1 Swenson, ½ mi. W Lueders, sec. 2, A. D. Norcop Sur. Drlg. 1,925 ft.
Fain & McGaha Oil Corp. No. 1 J. H. Wheeler, 3 mi. NW Sandy Ridge pool, sec. 55, O.A.L. Sur. M.I.
R. B. Farris et al No. 1 Beasley heirs, 3 mi. S Nugent, W. T. Evans Sur. Drlg. 1,455 ft.
S. C. Herring No. 1 Eleanor Haynes, sec. 191, S. Andrews Sur., NE edge Sayles pool. T.D. 1,912 ft.; U.R. 8-in. csg.
A. P. Kouri et al No. 1 Winkles, 2 mi. N Nugent, 200 ft. from S&W of J. M. Polk Sur. A-495. Rig up.
Lewis Prod. Co. et al No. 2 Sayles, 240 ft. sec. 6, T.&P. Sur., Blk. 20, 1 mi. S Sayles pool. Drlg. 1,535 ft.
Lueders Dev. Co. No. 1 Underwood, 2 mi. S. Lueders, sec. 16, N. Scott, but in S. L. Underwood Sur. No. 1. L. 1,790 ft.; prep. to treat.
Peckham et al No. 1 Denton Co. Natl. Bank, NE cor. county, sec. 17, H.&T.C. Sur., Blk. 3. Drlg. 1,130 ft.
Petroleum Producers Co. No. 1 H. C. Harvey, 3 mi. E Nugent, T.&P. Sur., Blk. 14. Drlg. 1,600 ft.
Riddle et al No. 1 J. D. Freeman, 8 mi. SW Anson, 1,684 ft. from N, 284 ft. from E sec 6., T.&P. Blk. 17. Drlg. 750 ft.

Palo Pinto County

D H. & C. Drlg. Corp. No. 1 Davenport, 6 mi. SE Palo Pinto, L. F. Margaret Sur. A-309. T.D. 2,000 ft.
Paul Garrett No. 1 Mabry heirs, NE cor. county, sec. 2,572, T.E.&L. Sur. S.D. 649 ft.
W. K. Gordon et al No. 2 Canty, 8 mi. W Palo Pinto, sec. 42, T.&P. Sur., Blk. 2. Drlg. L 3,612-23 ft.; shot 150 qts. 3,601-41.; est. 150 bbls.; will kill and cement.
Henry Hobbs et al No. 1 Bessie Holt, 4 mi. S. Graford, sec. 1,783, T.E.&L. Sur. Spudded.
Earnest Lloyd et al No. 1 Bailey, 3 mi. NE Graford, sec. 2,003, T.E.&L. Sur. S.D. 600 ft.

Shackelford County

Roeser & Pendleton No. 1 Davis, sec. 1, T.&P. Sur., Blk. 13, 10 mi. W. Albany. Sd. 1,594-95 ft.; est. 4,000,000 ft. gas; U.R. 8-in. csg.
Ungren & Frazier et al No. 1 Snyder, 3 mi. SW Sedwick, sec. 26, L.A.L. Sur. Cg. 3,504 ft.; reaming 3,650 ft.

Stephens County

C. B. Christie et al No. 1 E. S. Maury, 4 mi. W of Crystal Falls, J. Koehler Sur., Abst. 26. S.D. 3,600 ft.; moving in machine.
W. T. Garret et al No. 1 Echols, 6 mi. SE of Ivan, W½, sec. 10, Blk. 3, S.P.R. R. Sur. Sand 3,865-73 ft.; tested 16,750,000 ft. gas; trying to kill gas.
Mudge Oil Co. No. 1 S. H. Hill, 3 mi. SW Eliasville, sec. 1,122, T.E.&L. Sur. U.R. Drlg. 2,995 ft.

Tarrant County

E. E. Hoffpauir et al No. 2 W. H. Davis, 2 mi. S Arlington, H. Blackwell Sur. S.D.O. 2,140 ft.

Taylor County

Dunn & McAlister No. 1 Bowles, NE cor. county, SW¼ sec. 28, B.A.L. Sur. O.W. D.D.; sdy. L. 1,758-52 ft.; good S.O.&G.; S.D.; no test.
Golden Pet. Co. No. 1 C. B. Braune, sec. 15, League 144, Guadalupe Co. School Lands Sur. M.I.R.
Wm. Hix & Co. No. 1 A. H. Spencer, sec. 413, A. McBerth Sur., 5 mi. E Tuscola. Loc. for 4,500-ft. test.
Hal Hughes et al No. 1 Manahan, 5 mi. S Abilene, sec. 14, L.A.L. Sur. T.D. 1,225 ft.; S.D. for 8-in.

Wise County

Latex Oil Co. No. 1 Smith, 3 mi. E Bridgeport, Jas. Couch Sur., Abst. 104. Drlg. 2,165 ft.

NORTH TEXAS WILDCATS

Archer County

Cargo Oil Co. No. 1 Slopansky, sec. 64, Harris Sur. Loc.
O. P. Darsey No. 1 J. T. Longley, sec. 1839, T.E.&L. Sur. Loc.
Deep Oil Co. No. 1 Wilson No. 5, sec. 75, A.T.N.C.L. Sur. Drlg. 2,350 ft.
Tom Looney No. 1 J. S. Bridwell, W. B. Aldridge Sur. A-2. Drlg. 1,300 ft.
Pet. Prod. Co. No. 1 Turbeville D, R. Carson Sur. A-88. Drlg. 2,305 ft.
J. G. Steele No. 1 Andrews, R. Rainey Sur. A-354. Drlg. 800 ft.
Wilson & Ligon No. 1 Pearston, sec. 120, Harris Sur. Drlg. 1,830 ft.

Clay County

L. T. Burns No. 1 Sanzenbacker, L. N. Sparks Sur. A-401. Loc.
Green Mt. Oil Co. No. 1 Staggs, sec. 34, A.C.S.L. Sur. Drlg. 1,230 ft.
R. N. Hamilton No. 1 Fred Wines, sec. 4, H. Dixon Sur. A-106. S.D.O. 260 ft.

Cooke County

Denver P. & R. Co. No. 1 Solomon, W. G. Hunt Sur. A-493. Loc.
Geo. L. Pace No. 1 J. A. Rohmer, Geo. Ivy Sur. A-516. Loc.
Peterson et al No. 1 J. M. Floyd, Chas. DeMorse Sur. A-305. S.D.O. 870 ft.
Sparks & Russell No. 1 C. F. Bundy, P. P. Cary Sur. A-1239. Spud. and S.D.

Denton County

Bolivar Drlg. Co. No. 1 Bentley, J. Yoakum Sur. A-1443. Drlg. 1,530ft.
Bolivar Drlg. Co. No. 1 J. P. Knox, R. Howard Sur. A-542. Gas sd. 1,950-55 ft.; C.O. and tstg.
H. Culver No. 1 Waide, J. Chisum Sur. A-278. Loc.
J. C. Foster No. 1 Jeffcoat, J. West Sur. Drlg. 2,910 ft.
A. A. Lander, Inc., No. 1 Forrester, Jean Baroux Sur. A-45. Drlg. 1,450 ft.
Mullen & Weil, Inc., No. 1 D. G. Taylor, Linthieum Sur. A-1600. Drlg. 2,300 ft.
Oil Finance No. 1 J. S. Gambill. Drlg. 2,020 ft.
Ruwaldt & Martin No. 1 Joe S. Gambill, J. B. January Sur. A-658. Drlg. 1,340 ft.

Grayson County

F. Gailbreath et al No. 1 Singletary, Chas. Quillian Sur. A-989. P.B. 3,862-75 ft.; C.O. and testing; small show heavy oil, cleaning out.
North Texas Oil Co. No. 1 A. M. Smith, R. M. Williamson Sur. A-1300. Drlg. 330 ft.
Olson et al No. 1 D. R. Uitger, P. P. Cady Sur. A-301. Drlg. 5,250 ft.
Pete Shanor No. 1 Blair. H.L. 3,548-55 ft.; show heavy oil; treating with acid: swbg.

Hardeman County

Locke & Durham No. 1 A. Schoppa, sec. 57, H.&T.C. Sur., Blk. 16. Drlg. 700 ft.

Jack County

Big "6" Oil Co. No. 1 J. S. Callis, S.P.R.R. Sur. A-575. Drlg. 500 ft.
L. T. Burns No. 1 M. N. Garrett, B.B.B.& C. Sur. A-100. Drlg. 485 ft.
Carpenter Oil Corp. No. 1 Johnson, R. Parker Sur. A-461. R.U.S.
Danciger O. & R. Co. No. 1 Kinder, B.S.& F. Sur. A-83. Drlg. 2,460 ft.
H. M. Leidecker No. 1 J. W. Padgett, E. Allbritton Sur. A-1890. R.U.C.T.

(Continued on Page 114)

PERSONAL

ROY P. DORRIS, new president of the Petroleum Golf League, in Tulsa, is an engineer with the Texas Company at the Tulsa refinery. An enthusiastic golfer, he is a former vice president of the league and assisted in organizing the circuit, which is composed of 16 teams from Tulsa oil companies. Other officers are M. H. CONRAD, vice president; L. M. LADET, secretary; BILL WYATT, assistant secretary; J. H. CUDDY, recording secretary.

W. F. IRWIN, of Vancouver, British Columbia, spent a few days recently in Calgary, Alberta.

BEN H. COX, land man, and ROBERT L. KIDD, geologist, both of the Empire Company, made a recent trip through parts of Mississippi.

JOHN CADENHEAD, formerly warehouseman for the Magnolia Petroleum Company at Luling, Tex., is now the South Texas representative for Jon R. Long, Manufacturer, and will have headquarters at Freer, Tex.

DR. W. C. ILLING, London, England, professor of geology, Royal College of London, and consulting geologist for the Anglo-Persian Oil Company, was the guest speaker at the Dallas Petroleum Geologists' luncheon on March 31 at the Baker Hotel in Dallas. Dr. Illing is making a tour of the southwestern fields in behalf of several oil interests.

GURNEY PEOPLES, division manager for Black, Sivalls & Bryson, Inc., Fort Worth, Tex., has just returned from a business trip to the new Cisne and Patoka fields, in Illinois.

MERLE C. ISRAELSKY, chief paleontologist of United Gas System, Houston, Tex., addressed the Shreveport Geological Society Friday, April 2, on the subject of "General Correlation."

W. D. AGNOR has been appointed as field inspector for Texas Railway Commission, headquarters in Marshall, Tex., where he will assist in looking after development in the East Texas border counties. The personnel of the Marshall office of the commission now numbers four.

J. M. ERICKSON, Buffalo, N. Y., accompanied by his son, J. M. ERICKSON, JR., and daughter, MISS ELLEN ERICKSON, and DR. LEE CURTAIN of Milwaukee, Wis., has just completed a business inspection trip to Texas. Mr. Erickson is official and stockholder in the Homestead Oil & Gas Company of Texas, and Magnus Oil Company.

HOWARD PIGEON, formerly engineer of the Gold Standard Oils refinery at Wainwright, Alberta, is working in the Turner Valley field.

M. J. RATHBONE, president of Standard Oil Company of Louisiana, Baton Rouge, was a Shreveport, La., visitor for several days last week.

W. C. FISHER, managing director of Model Oils, Ltd., has returned to Calgary, Alberta, from a six-weeks' trip to California and the Pacific Coast.

HOWARD H. JEUTTER, J. PAUL JONES and ARTHUR C. SIMMONS were elected directors of the Bradford District Pennsylvania Oil Producers Association at the annual meeting of the association in Bradford, Pa., on March 30.

C. S. GASKELL, chief accountant in the Imperial Oil office at Calgary, Alberta, for 19 years, has taken charge of the Imperial agency at Claresholm, Alberta, succeeding CARL MOGENSON, who is moving to New Westminster, British Columbia.

R. D. COPLEY, formerly district petroleum engineer for the Standard Oil Company of California at Los Angeles, has been appointed assistant manager for the California Company for the Rocky Mountain district, with headquarters at Denver, Colo.

DAVID R. FARIES, chairman of the board; C. C. SPICER, president; H. H. MADDREN, vice president; G. B. KNOX, secretary-treasurer, and M. C. CAMPBELL, assistant secretary-treasurer, of Republic Petroleum Company, were elected to their respective offices at the annual meeting of the company held recently in Los Angeles, Calif.

Do You Remember?

From The Oil and Gas Journal Files

10 YEARS AGO

Production of the Seminole, Oklahoma, field reaches 341,000 barrels and is still climbing.

John S. Griffin, of Tulsa, prominent producer in the Mid-Continent and eastern fields, dies in St. Louis, Mo., and is buried at Butler, Pa.

Humble, Gulf-Magnolia and Prairie pipe lines from the Texas Panhandle are under construction.

20 YEARS AGO

It is expected 1,450,000 motor cars will be manufactured in 1917, a 50 per cent increase over 1916.

Six men elected to the Federal Advisory Board on oil include A. C. Bedford, E. C. Lufkin, E. L. Doheny, Harry F. Sinclair, J. A. Davidson and John H. Markham, Jr. The board will arrange for the oil needs of the army and navy.

The Standard Oil Company tanker Sequoyah sinks a German submarine off the English coast in a 20-minute battle. One man was killed and three wounded on the tanker.

25 YEARS AGO

Mid-Continent crude has been raised to 62 cents per barrel. There have been several 2-cent advances in the past three months and producers have their hopes centered on a 75-cent market by summer time.

The discovery well in the Cushing field, in Oklahoma, opened in March by C. B. Shaffer, is flowing 150 barrels per day. The well location is given as NW cor. section 32-18-7, on the Addie Jones lease.

Kansas wells drilled this year average 950 feet in depth. In Oklahoma the average depths of the currently completed wells were as follows: In the Osage Nation, 1,800 feet; Cherokee Nation, Nowata and Rogers counties, 800 feet, Washington and Tulsa counties, 1,300 feet; Creek Nation, 1,500 feet; Pawnee reservation 2,000 feet; miscellaneous 1,500 feet.

DR. W. W. HOLLAND, representative of Petroleum Conversion Corporation, is now stationed in Houston, Tex.

ROBERT A. BROWN, SR., and MRS. BROWN, of Calgary, Alberta, are spending a few weeks' holiday in California.

R. C. STEWART, division manager of the Texas Company, Shreveport, La., is in Houston attending annual meeting of the producing committee of that company.

PETER Q. NYCE, attorney, of Washington, D. C., was in Denver, Colo., last week conferring with H. LESLIE PARKER and WILLIAM A. MYERS on permit matters.

HARRY G. MORRIS, of Vancouver, British Columbia, secretary and managing director of the Maple Leaf Oil Company, visited Calgary recently in connection with oil development.

R. B. BOYD has been elected a member of the Central Committee of California Oil Producers, succeeding R. D. MONTGOMERY of the Richfield Oil Corporation, who recently resigned.

HARRY R. VOORHIS, of the Seaside Oil Company, California, has been appointed supervisor of the southern district, succeeding C. N. COLLINS, who recently moved up the line of advancement.

F. W. PEMBERTON, of Union Oil Company, who has been manager of the northern division, comprising Washington, Oregon and Idaho, has been appointed manager of the central division, and OLE BERG, JR., Oregon sales manager, has been appointed manager of the northern division, succeeding F. W. Pemberton.

PARAGRAPHS

J. A. SELBY, formerly head land man for Magnolia Petroleum Company at El Dorado, Ark., has been transferred to that company's new land office in New Orleans, La., where he will enter the active Mississippi leasing campaign. W. L. WOOD, who has been in charge of Mississippi land matters for that company since 1928, will replace Selby.

R. OGARRIO, vice president in charge of production, and R. F. BAKER, chief geologist, of the Texas Company, with headquarters at New York, attended the annual meeting of the producing committee at Houston, Tex., the past week. Other visiting officials included F. C. SEALEY, division production manager, of Los Angeles, Calif.; A. C. HUNTER, assistant to the manager of the producing departments at New York; H. A. STEWART, division manager of the Rocky Mountain division at Denver, Colo.; R. C. STEWART, division manager of the Louisiana-Arkansas division at Shreveport, La.; J. L. McMAHON, division manager of West Texas-New Mexico with headquarters at Fort Worth, Tex., and E. R. FILLEY, division manager of the Oklahoma-Kansas division at Tulsa.

J. W. HOOVER, geologist, has taken offices at Brookhaven, Miss., to supervise geophysical operations for the California Company in Mississippi.

DAN C. NUFER, formerly with Carter Oil Company, Tulsa, and T. F. DILLE, have formed a partnership to do consulting geological work and will maintain offices in Tulsa.

HAROLD H. MESSIMER, Tulsa tank gauging engineer, has acquired the business and records of the late JAMES B. ROBINSON, tank gauging engineer. The two were formerly associated in business and got their professional training in the same school, with Mr. Robinson's father, the late JAMES ROBINSON, as their preceptor. The elder Mr. Robinson was the originator of the tank gauging system universally in use.

P. J. WHITELEY, of the General Petroleum Corporation, has been appointed assistant manager of purchases, succeeding E. W. BECK, who was recently promoted to manager of purchases. Mr. Whiteley has been associated with General Petroleum since 1920, when he started as bookkeeper in the purchasing department. Later he was sent to Tampico, Mexico, with the Continental Mexican Petroleum, then a subsidiary of General Petroleum. Since 1929 he has been buyer in the Los Angeles headquarters of General Petroleum. Before his association with this company he was connected with the Pierce Oil Corporation.

L. H. PRICHARD, president of the Anderson-Prichard Oil Corporation, Oklahoma City, returned last week from a 40-day cruise to South American points.

WILLIAM DEMICK, formerly with the Baker Corporation, has been named general superintendent and consulting geologist for the Buckingham Oil Company.

V. V. JACOMINI, of New York, vice president of the True Vapor Phase Corporation, a subsidiary of Petroleum Conversion Corporation, is now on a trip abroad which will include visits in Australia and in Tasmania.

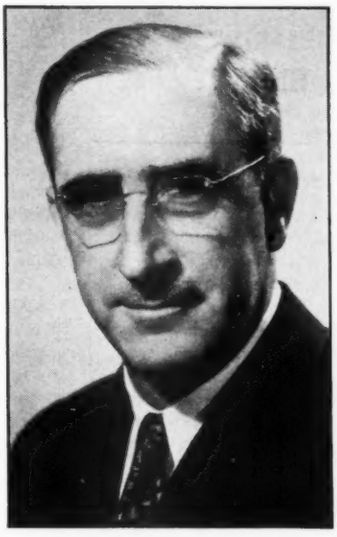
FERGUS S. DAVIS, scout for the Atlantic Refining Company in the Corpus Christi, Tex., district, has been elected Bull Scout of the organization in that area. Mr. Davis, who succeeds WESLEY WEED of the Sun Oil Company, will be supported by CHARLIE JOHN, Pure Oil Company scout, re-elected as secretary and treasurer.

J. V. WICKLUND, head of the Wicklund Development Company, which opened the larger producing section of the new Buckeye Township, Gladwin County, field in central Michigan several months ago, is spending much of his time now in the Knobs area, McLean County, Kentucky, where his company recently started a test.

DR. K. G. McKENZIE, of New York, manager of the technical division of the Texas Company, was in Denver attending district salesmen's meeting of that company. Others of the party included J. K. SKILLINGS, manager of the sales department; RAYMOND BROWNE, of the advertising department, and S. B. WRIGHT, of Chicago, territorial manager.

No Tedium in His Job

When Dr. Angus McLeod joined the Shell Oil Company 17 years ago he was assigned to the job of keeping track of all development work and lining up favorable-looking acreage in any part of the area to which he was sent. And the area was the region roughly indicated by a line drawn northwesterly from Florida to New Mexico. That guarded against excessive concentration of effort and at the same time insured against tedium. The Shell organization in that territory consisted then of six persons, distributed among the geological, land and scouting departments. In the course of time the company's Gulf Coast headquarters were moved from Shreveport, La., to Dallas, Tex., and later to Houston. There Doctor McLeod served as manager of the exploration department till October, 1935, when he was sent to Los Angeles, Calif., as chief geologist and assistant to Dr. E. F. Davis, vice president in charge of exploration.



DR. ANGUS McLEOD

Before young McLeod entered Shell's service he had acquired geological training. While attending the University of Toronto, where he received his B. A. degree, he spent several summers with the Canadian Geological Survey. After that he enrolled at the University of Chicago, majoring in geology and earning his Ph.D. With his wife and three children he resides in Los Angeles. He is active in the work of the American Association of Petroleum Geologists.

BURKS WHITE, active in several Michigan fields as an independent operator off and on for the past 10 years, is now active in the Excelsior Springs field.

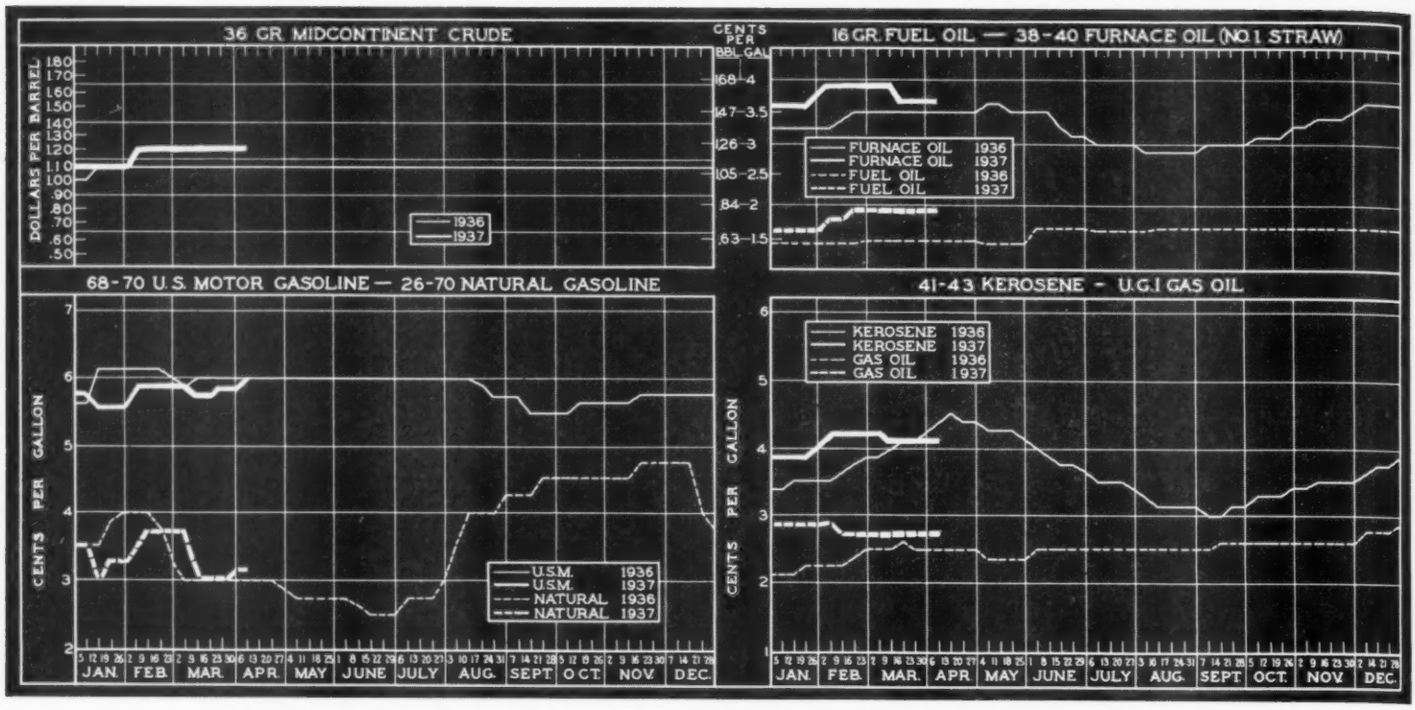
MISS RUTH B. HUNTER, R.N., of Toronto, Ontario, sailed from New York on March 13 for Columbia, where she will spend two years on the nursing staff of the Tropical Oil Company.

R. W. SHERMAN, of Barnsdall Oil Company, California, recently resigned in order to devote his entire time to personal business. After a brief vacation he will engage in consulting work and will maintain offices in Los Angeles.

CARROLL H. WEGERMANN, formerly chief geologist with the Pan American Petroleum & Transport Company and now associated with the National Park Service with headquarters in Omaha, Neb., visited friends in Tulsa the first of the week.

I. B. CATE, superintendent at Borger, Tex., for the Halliburton Oil Well Cementing Company, has been transferred to Oklahoma City, Okla. H. PHILLIPS, in charge of the Big Spring, Tex., offices of the company, has been transferred to Borger to succeed Mr. Cate.

T. N. DAVEY, after 15 years of association with the Atlantic Refining Company, has resigned his position to become manager of the Buckingham Oil Company. Mr. Davey has acquired property adjoining the Aransas Pass Railway near Aransas Pass, Tex., for the possible future erection of a 36-car loading rack, which may serve as the terminus of a short pipe line giving outlet to Buckingham production in the McCampbell field.



Representative Mid-Continent Quotations on Crude Oil and Refined Products. Basis Oklahoma (Group 3)

Big Motor Fuel Stocks Losing Their Power to Scare Group 3 Refiners

By T. F. SMILEY

Conviction grows in the Group 3 territory that major refiners whose recent heavy purchases of gasoline stirred comment were actuated by keen business sense and foresight. The trade was in a definitely cheerful mood this week and laying plans for a smashing summer business. The market was firmer with quotations moving upward. Some refiners frankly said they were out of the spot market, believing they could get more money for their material in a short time.

Scare Over Gasoline Stocks Fading

Concern over total gasoline stocks is diminishing rapidly. As Bureau of Mines figures from week to week have revealed immense accumulations, there has been speculation as to just where these accumulations were. One opinion is that a large part is earmarked material stored at the Gulf for overseas shipment. Gasoline waiting for bottoms appears in the refinery statistics, but it is not available for the domestic market. For practical purposes it need not be considered in analyses of the market outlook.

Much of the rest of the gasoline which has caused uneasiness is believed to be in the hands of large companies which have stored it against demand which is felt to be assured.

It is pointed out that total stocks now represent about 45 days' supply, compared with 43 days' supply a year ago. Nothing to get excited about, observers comment, especially in view of the fact that so much of the material will never be placed on the market in this country. In the Mid-Continent territory there is estimated to be about 30 days' supply, which is about what there was at this time last year. Of importance in this connection is the fact that last year East Texas was still a big source of gasoline, with much illegally produced material awaiting disposition. East Texas no longer is a cause of uneasiness. Only a few refineries are in operation, and these are either producing gasoline eligible for interstate shipment or gasoline eligible for intrastate movement only, but commanding regular posted prices.

A snowstorm which blanketed much of the northern area which gets its gasoline from Oklahoma did not seem to disturb the market. "This is the year we're going to get well," declared an executive of a company which distributes oil products in five states of the Northwest. His view is quoted because he is commonly known for his pessimism. "He'd bet you two to one that this sunshine is artificial," said one of his associates.

Increased firmness of third-grade gasoline provoked comment in view of the admitted fact that it is declining in popularity. Its improved market position was attributed to the marked decrease in volume manufactured. The shift to higher-octane material by refiners has left a ready outlet for such third-grade as they still make.

Natural gasoline manufacturers are having the best spring business of which they have record. They ascribe it largely to the fact that as the supply of light East Texas crude has dwindled heavier crudes, from South Texas and other areas, are taking its place. Gasoline from the heavier oil demands more casinghead. A brisk call for Texas natural at an eighth higher than last week was reported. Oklahoma natural was hanging on to last week's price, 3⅛ cents, in a slow market.

Kerosene in Lively Demand

Kerosene, after exhibiting a little softness late last week, was in lively demand again. Tractor fuels were stronger, with quotations stiffening. A buoyant market seems close at hand. Although the need for heating oils is slowing up, the supply is falling too, with the result that prices underwent little or no change. Refiners are switching from the furnace oils to kerosene and tractor distillates. No. 1 straw was reported actually scarce, and there was no surplus of prime white. The lubricant group was steady. Wax was firm.

Refined Oil Market Barometer

Gasoline sturdier, with prices moving upward, impelled by both expanding consumption and widespread conviction that advances in crude prices are imminent. Uneasiness over immense stocks is fading. Barring new gusher production or violent economic disturbance, record-breaking season is expected. Prolonged cold weather is supporting heating oils. Kerosene steadier.

MID-CONTINENT. Gasoline improving. Kerosene and tractor fuels stronger. Naturals holding.

EAST COAST. Gasoline definitely better. Threatened price war nipped. Fuels still in demand.

GULF COAST. Gasoline demand heavy. Burning oil strong. Kerosene weak.

CALIFORNIA. Gasoline fractionally higher. Gas oil and diesel stronger. Fuel oil firm.

PENNSYLVANIA. Motor fuels looking better. Strength in lubricants continues.

CHICAGO. Jobber buying of gasoline more active. Kerosene improved. Burning oils weaker.

Gasoline Consumption on East Coast Showing Ten Per Cent Increase

By H. STANLEY NORMAN

NEW YORK, Apr. 6.—First tangible evidence of spring improvement in gasoline marketing conditions in the northeast came last week when the Socony-Vacuum Oil Co., Inc., advanced tankcar and tank wagon motor fuel prices a half cent per gallon throughout New England and in the Albany district of northern New York. Although the New England district has been considered below normal for several months, the fact that conditions warranted and supported the advance, at least temporarily, is accepted by the trade as evidence of definite improvement. Tanker rates prevailing between the Gulf Coast and northern Atlantic ports are becoming an increasingly important factor in the motor fuel market and unless an about-face in the trend is experienced the transportation charges will continue an important factor throughout the summer.

With stable market existing on the Gulf Coast and in light of the sustained high tanker rates prevailing, the gasoline advance in the northeast is not considered surprising. Consumption is exceeding 1936 demand by a substantial margin, estimated by some observers up to 12 per cent and only infrequently calculated at less than 10 per cent.

Some indication of the flow of traffic in this important consuming center is reflected by official toll reports for Easter Sunday automobile traffic. The figures are all the more impressive in consideration of the temperature and weather conditions prevailing on that day. The thermometer hovered around the freezing mark all day and a sharp wind added to the discomfort of those exposed. However, 50,726 motor vehicles passed through the Holland Tunnel on Easter, the highest number for the holiday in five years. The total for the three-day week-end was 130,360, an increase of more than 25,000 or 24 per cent over the corresponding period in 1936.

While the Holland Tunnel figures were particularly impressive, all of the interstate traffic facilities of the New York Port Authority shared the improvement in traffic. The George Washington Bridge was used by 33,123 vehicles on Easter Sunday and 73,080 for the three-day period, the latter figure representing a net increase of 15,000 over the figure a year ago. The three Staten Island bridges reported a total of more than 12,000 for the week-end, an increase of nearly 10 per cent.

While the motor vehicles using the two important interstate traffic arteries in reaching and leaving Manhattan Island are unimportant in themselves and bare little relationship to total vehicle registration they are considered representative of general increase in automobile use. It is considered safe to estimate that gasoline consumption increased in direct proportion to the greater traffic.

Another encouraging development for the oil trade in this district was failure of a threatened price war to mature in the Queens Borough. A few scattered dealers launched a price-cutting campaign in the Queens early last week, chopping the price for regular grade gasoline at some stations to 7 gallons for 98 cents, whereas the previous normal price asked for the same quantity was $1.20. The movement was halted with a minimum of damage, however, and practically all stations had resumed their normal price schedule at the end of the week.

In the tankcar market, less gasoline was reported available at 6¾ cents per gallon for 65 octane material last week. In contrast to early March conditions, a bulk of 65 octane gasoline sold in tankcars is now priced at a minimum of 7 cents, although small quantities continue to move at 6⅞ cents per gallon.

Several trade observers feel that the gasoline market will stiffen appreciably in the near future, if the tanker fixture rates remain at their present level. With decline of fuel oil requirements, the trade generally anticipates easier conditions to develop in charter rates, but so far this year no evidence has been given of the normal trend. If traders are forced to move quantities of gasoline north at existing cargo rates and with no apparent weakness on the Gulf Coast, higher prices to the consumer appear inevitable.

Although there has been considerable shrinkage in fuel oil demand by domestic consumers and in turn by jobbers and local distributors, the drop so far has not exerted much influence on prices. No. 2 fuel oil was reduced two weeks ago an eighth of a cent per gallon on the New York tankcar market, but the decline was checked at that level and no subsequent important cutting has been reported.

The rush to replenish stocks in tanks of domestic consumers, jobbers and distributors when freezing temperatures developed over the Easter week-end was further evidence, however, that distillate fuel oil buying is on a hand-to-mouth basis.

Nature of the distillate fuel oil market, however, does not apply to the industrial grades and to Bunker C grade material. Industrial consumers are using increasing quantities of fuel oil at prevailing prices and the Bunker C market is firm at $1.20 per barrel, in New York, Baltimore, Philadelphia, Norfolk and Boston.

Kerosene has not suffered in quoted prices, but movement is unsatisfactory and probably will not improve until spring plowing is launched on a major scale. Another decline in third-grade gasoline prices in the western Pennsylvania district to offerings at 4½ cents per gallon further restricted kerosene demand in that area the early part of last week. Some normal consumers of kerosene for tractor and stationary engine fuel turned to the third-grade gasoline when it became temporarily available for less money. However, several refiners declined to compete for the business at 4½ cents per gallon for third-grade gasoline and the price turned upward again at the end of last week, although its movement in that direction probably will be limited to an eighth or a quarter of a cent per gallon under present conditions.

Neutral oil in the Pennsylvania district appeared to be up a half or three-quarters of a cent per gallon while the demand for practically all grades of lubricating oils is unprecedented. Almost without exception, jobber customers are increasing their purchases for summer business by 25 per cent or more. Steam refined cylinder stock is also scarce despite repeated price advances over the past three or four weeks.

A bulk of the lubricating oil busi-

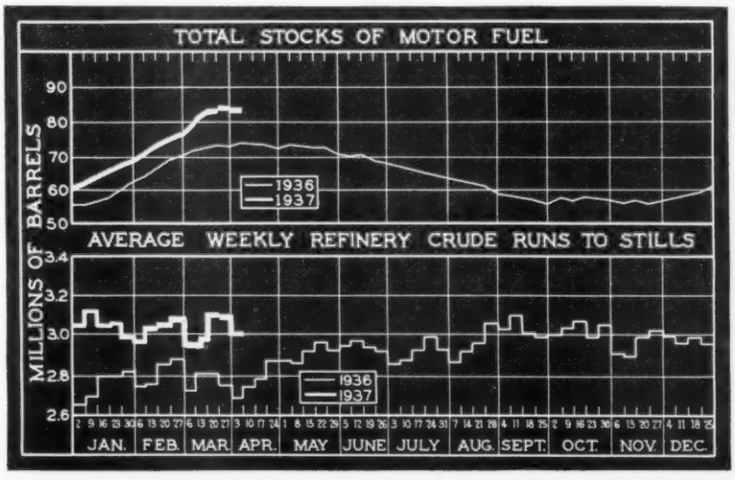
(Continued on Page 112)

A. P. I. Weekly Refinery Statistics

Week Ending April 3, 1937

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline (bbls.)	Gas oil and fuel oil (bbls.)
East Coast	100.0	541,000	18,548,000	6,462,000
Appalachian	88.4	94,000	2,920,000	541,000
Indiana, Illinois, Kentucky	92.1	402,000	14,177,000	4,403,000
Oklahoma, Kansas, Missouri	84.6	284,000	9,384,000	2,918,000
Inland Texas	54.3	119,000	2,236,000	1,280,000
Texas Gulf	95.5	657,000	10,626,000	6,546,000
Louisiana Gulf	96.3	129,000	1,643,000	1,453,000
North Louisiana and Arkansas	63.7	36,000	488,000	237,000
Rocky Mountains	69.7	51,000	1,994,000	731,000
California	90.9	471,000	14,974,000	68,106,000
Total reported	88.8	2,784,000	76,990,000	92,677,000
Estimated unreported	.....	221,000	6,167,000	3,128,000
*Estimated total	.....	3,005,000	83,157,000	95,805,000
*Estimated total previous week	.....	3,060,000	83,538,000	96,591,000
*April 4, 1936	.....	2,690,000	73,310,000	95,954,000

*Bureau of Mines basis, currently estimated.



RETAIL OIL MARKETS

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of April 6, 1937

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wag.	Dlr.	Inc. tax	tank-wag.
Chicago, Ill.	16 0	14 0	4 0	10 1
Decatur	16 0	14 5	4 0	10 1
Joliet	16 0	14 5	4 0	10 1
Peoria	16 0	14 5	4 0	10 1
Quincy	15 8	14 3	4 0	9 9
Davenport, Ia.	16 0	14 5	4 0	10 1
Des Moines	15 8	14 3	4 0	9 9
Mason City	16 2	14 7	4 0	10 3
Sioux City	16 0	14 5	4 0	10 1
Duluth, Minn.	16 8	15 3	4 0	10 9
Mankato	16 4	14 9	4 0	10 5
Twin Cities	16 4	14 9	4 0	10 5
La Crosse, Wis.	17 4	15 9	5 0	10 5
Green Bay	17 7	16 2	5 0	10 8
Milwaukee	17 3	15 8	5 0	10 4
Detroit, Mich.	15 1	13 6	4 0	9 8
Grand Rapids	16 5	15 0	4 0	10 9
Saginaw	16 3	14 8	4 0	8 5
Evansville, Ind.	17 5	16 0	5 0	†10 6
Indianapolis	17 7	16 2	5 0	†9 6
South Bend	17 9	16 4	5 0	†9 6
Fargo, N. Dak.	17 4	15 9	4 0	11 5
Minot	18 6	17 1	4 0	12 7
Huron, S. Dak.	17 8	16 3	5 0	10 9
Kans. City, Mo.*	15 4	13 9	4 0	8 9
St. Louis*	15 7	14 2	4 0	9 8
St. Joseph*	15 4	11 9	4 0	7 3
Wichita, Kans.	14 9	13 4	4 0	8 9

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax.

(Exclusive of state general sales taxes, except Indiana and South Dakota.)

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolex Fuel Oil in Chicago

Effective Dec. 7, 1936, f.o.b. Chicago tank-wagon prices: Range oil, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.3 cents. Stanolex No. 1, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.0 cents. Stanolex furnace oil, 1-149 gallons, 7.8 cents; 150 gallons and over, 7.0 cents. Stanolex A, 1-399 gallons, 5.75 cents; 400 gallons and over, 4.75 cents. Stanolex B, 1-799 gallons, 5.75 cents; 800 gallons and over, 4.75 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero.
	Tank wag. dlr.	Tank car con'r.	Inc. tax	tank-wag.
Atl'tic City, N. J.	13 0	11 5	4 0	8 0
Newark	12 5	11 0	4 0	8 0
Annapolis, Md.	15 1	13 6	5 0	10 0
Baltimore	14 5	13 0	5 0	8 5
Cumberland	16 9	14 4	5 0	10 0
Wash'g'n, D. C.*	12 5	11 0	3 0	9 0
Danville, Va.	17 7	15 2	6 0	12 9
Norfolk	16 5	14 0	6 0	11 5
Petersburg	16 8	14 3	6 0	11 7
Richmond	16 8	14 3	6 0	11 7
Roanoke	18 0	15 5	6 0	12 9
Charles'n, W. V.	16 3	13 8	6 0	12 6
Parkersburg	15 6	13 1	6 0	11 2
Wheeling	15 5	14 0	6 0	12 2
Charlotte, N. C.	18 9	16 4	7 0	13 6
Hickory	19 4	16 9	7 0	13 0
Mt. Airy	19 2	16 7	7 0	12 8
Raleigh	18 5	16 0	7 0	12 1
Salisbury	19 0	16 5	7 0	12 7
Charleston, S. C.	17 5	15 0	7 0	11 1
Columbia	18 5	16 0	7 0	12 1
Spartanburg	19 2	16 7	7 0	12 9

*Standard of N. J. has discontinued posting service-station prices at all above points except at Washington where a station price of 16 cents is in effect.

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective Jan. 7, in West Virginia differential above tankcar price on yearly purchases: up to 35,999 gallons, 2.5 cents over tankcar; 36,000 to 119,999 gallons, 2.0 cents; 120,000 to 239,999 gallons, 1.5 cents; 240,000 to 479,999 gallons, 1 cent; over 480,000 gallons .5 cent over tankcar price.

Effective Jan. 25, 1937, in North and South Carolina and effective Feb. 27 in Virginia, except in Arlington and Fairfax counties: Deliveries of 50 gallons or more by tank-wagon billed at price 2 cents over posted consumer tankcar price in effect at time and place of delivery. Deliveries less than 50 gallons billed at price 6 cents over posted tankcar price. Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline			Kero.
	Tank wag.	Net dlr.	Inc. tax	tank-wag.
Atlanta, Ga.	22 0	19 0	7 0	*13 0
Augusta	18 5	15 5	7 0	*14 0
Macon	21 5	18 5	7 0	*14 5
Savannah	20 0	17 0	7 0	*13 0
Birm'ham, Ala.	21 0	18 0	8 0	12 0
Mobile	22 0	19 0	9 0	11 0
Montgomery	23 0	20 0	9 0	12 5
Jackson, Miss.	21 0	18 0	7 0	*13 0
Vicksburg	20 5	17 5	7 0	*13 0
Jacksonville, Fla.	20 5	17 5	8 0	11 0
Miami	20 5	17 5	8 0	12 5
Pensacola	22 0	19 0	9 0	12 0
Tampa	21 5	18 5	8 0	11 0
Lexington, Ky.	19 5	16 5	6 0	11 0
Covington	19 0	16 0	6 0	11 0
Louisville	19 5	16 5	6 0	10 5
Paducah	19 0	16 0	6 0	10 0

Price basis to tank-wagon consumers: Effective January 4, 1937, 3 cents per gallon below tank-wagon price. Kerosene prices in all states subject to 2 cents discount except in Kentucky where prices are net.

*Includes 1 cent state tax. Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola, and Tampa, Fla., have a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline		Kero.
	Dealer	Inc. tax	tank-wag.
Denver, Colo.	17 5	5 0	11 5
Grand Junction	20 0	5 0	15 0
Pueblo	15 0	5 0	10 5
Casper, Wyo.	18 0	5 0	11 5
Cheyenne	18 0	5 0	13 0
Butte, Mont.	19 5	6 0	15 5
Billings	21 5	6 0	15 5
Helena	21 5	6 0	15 5
Great Falls	21 5	6 0	15 5
Salt Lake, Utah	19 5	5 0	16 0
Twin Falls, Ida.	21 5	6 0	18 0
Boise	21 0	6 0	18 0
Albuquerque, N. M.	17 5	6 5	12 0

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			Kero.
	Tank wag. con'r.	Divided dlr.	Inc. tax	tank-wag.
Ohio points	17 0	16 0	5 0	*13 5

*Includes state tax of 1 cent.

Divided dealer price is also price to authorized agents, exclusive of .5 cent rental. Tank-wagon price is price to commercial consumers in deliveries of 25 gallons or more; less than 25 gallons get service-station price.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline			Kero.
	Tank wag.	Serv. sta.	Inc. tax	tank-wag.
San Francisco	17 5	18 5	4 0	11 5
Los Angeles	17 0	18 0	4 0	9 0
Fresno, Calif.	18 5	19 5	4 0	12 0
Phoenix, Ariz.	21 0	22 0	6 0	‡16 0
Reno, Nev.	20 0	21 0	5 0	13 0
Portland, Ore.	20 0	21 0	6 0	13 5
Seattle, Wash.	20 0	21 0	6 0	13 5
Spokane	23 0	24 0	6 0	16 5
Tacoma	20 0	21 0	6 0	13 5

‡Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline			Kero.
	Tank wag. dlr.	Tank car con'r.	Inc. tax	tank-wag.
Albany, N. Y.	14 0	12 5	4 0	7 75
*Met. N. Y.:				
Manh't'n, Br'nx	13 5	12 0	4 0	7 25
Staten Island	13 75	12 0	4 0	7 25
Q'ns & Brklyn	13 5	12 0	4 0	7 25
Buffalo	14 3	12 67	4 0	8 25
Rochester	14 3	12 74	4 0	8 25
Syracuse	14 3	12 7	4 0	8 75
Boston, Mass.	14 0	12 5	4 0	7 50
Portland, Me.	15 8	13 5	5 0	7 75
Manch'ter, N. H.	16 3	14 0	5 0	8 00
Burlington, Vt.	15 9	13 9	5 0	8 75

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point: Monthly purchases under 5,000 gallons, pay divided dealer tank-wagon price at delivery point.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Tank wag. dlr.	Tank car con'r.	Inc. tax	tank-wag.
Philadelphia, Pa.	14 0	12 5	5 0	10 5
Pittsburgh	15 5	13 5	5 0	11 0
Allentown	14 5	13 25	5 0	11 0
Erie	14 5	13 0	5 0	11 0
Scranton	14 5	13 25	5 0	11 0
Altoona	15 5	13 5	5 0	11 0
Dover, Del.	14 5	....	5 0	11 0
Wilmington	13 5	....	5 0	11 0
Springf'd, Mass.	13 8	....	4 0	7 5
Worcester	14 3	....	4 0	8 0
Hartford, Conn.	13 6	....	4 0	7 5
New Haven	13 5	....	4 0	8 0
Providence, R. I.	12 5	....	3 0	7 5

Atlantic has transferred all stations to dealers except in Philadelphia and Pittsburgh where prices are 17.5 and 20.0 cents per gallon respectively.

Price basis to undivided dealers—Dealer tank-wagon less .5 cent per gallon.

Consuming accounts not under contract—when made by tank-wagon in quantities of 50 gallons or over, dealer price.

Commercial accounts under contract—annual consumption 2,500 to 100,000 gallons per year, 1 cent above posted tankcar price; over 100,000 gallons per year, .5 cent above posted tankcar price.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Tank wag. dlr.	Tank car con'r.	Inc. tax	tank-wag.
N. Orleans, La.	20 0	17 5	*10 0	†14 0
Baton Rouge	18 0	15 5	8 0	12 0
Alexandria	18 5	16 0	8 0	12 0
Lafayette	19 0	16 5	8 0	12 5
Lake Charles	19 0	16 5	8 0	12 5
Shreveport	17 5	15 0	8 0	9 5
Knoxville, Tenn.	21 0	18 5	8 0	14 0
Memphis	19 0	16 5	8 0	12 0
Chattanooga	20 5	18 0	8 0	13 5
Nashville	20 0	17 5	8 0	13 0
Bristol	19 75	18 5	8 0	14 5

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax.

Standard of La. has transferred all stations to dealers except in New Orleans and Baton Rouge where station prices are 23.5 and 21.5 cents per gallon, respectively.

Price basis to commercial consumers: Effective Dec. 21, 1936, deliveries of 50 gallons or more in one delivery, posted consumer tankcar price plus 2 cents per gallon; consumers taking deliveries of less than 50 gallons at one time pay posted consumer tankcar price plus 6 cents per gallon.

Louisiana kerosene prices include 1-cent state tax.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline			Kero.
	Tank wag.	Dlr.	Inc. tax	tank-wag.
Omaha	18 4	16 9	6 0	10 4
McCook	18 0	17 0	6 0	10 0
Norfolk	18 8	17 3	6 0	10 8
North Platte	19 2	17 7	6 0	11 2
Scotts Bluff	19 9	18 4	6 0	10 9

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15 7
V.M.&P. naphtha	16 0
Cleaners' naphtha	15 0
Stanisol	15 0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b Chicago. Each price subject to discount of 1 cent per gallon for 150 gallon lots if covered by contract.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline		Kero.
	Dealer	Inc. tax	tank-wag.
Muskogee, Ok.	15 5	5 0	7 0
Oklahoma City	13 0	5 0	8 0
Tulsa	14 0	5 0	6 0
Ft. Smith, Ark.	15 0	5 0	10 0
Little Rock	17 5	7 5	9 5
Texarkana	15 0	5 0	9 0

Texas

	Gasoline			Kero.
	Tank wag.	Serv. sta.	Inc. tax	tank-wag.
Dallas, Tex.	14 0	18 0	5 0	8 0
Fort Worth	14 0	18 0	5 0	8 0
Houston	14 5	18 5	5 0	8 0
San Antonio	14 5	18 5	5 0	8 0

Canada*

3 Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Gasoline			Kero.
	Tank wag.	Serv. sta.	Inc. tax	tank-wag.
Hamilton, Ont.	22 0	....	6 0	17 0
Toronto, Ont.	22 0	24 5	6 0	17 0
Brandon, Man.	29 8	32 8	7 0	22 8
Winnipeg, Man.	28 2	31 2	7 0	20 7
Regina, Sask.	29 5	....	7 0	22 0
Saskatoon, Sask.	32 3	....	7 0	24 8
Edmonton, Alta.	30 5	33 5	7 0	24 2
Calgary, Alta.	28 0	31 0	7 0	21 5
Vancouver, B. C.	22 0	26 0	7 0	23 0
Montreal, Que.	19 0	....	6 0	17 5
St. John, N. B.	24 0	28 0	8 0	18 5
Halifax, N. S.	24 0	28 0	8 0	18 5

*Imperial gallon used in Canada.

Discount to dealers: Divided dealers pay 3 cents per gallon below station price; undivided dealers pay 4 cents per gallon below station price except in cities of Hamilton, Toronto and Montreal when discounts below station prices are one-half cent per gallon less and in Vancouver where discounts are 1 cent per gallon more.

Retail Price Changes

Standard Oil Co. (Indiana) March 26 reduced tank-wagon kerosene 2.2 cents at Saginaw; March 29 reduced tank-wagon kerosene 2.2 cents in St. Joseph.

Socony-Vacuum Oil Co., Inc., April 1 advanced tank-wagon dealer and tankcar consumer gasoline .5 cent in Albany, Boston, Portland, Manchester and Burlington.

Standard Oil Co. of Nebraska March 25 reduced tank-wagon gasoline .3 cent and advanced dealer gasoline 2 cents in McCook.

Standard Oil Co. of Louisiana March 23 advanced tank-wagon kerosene 3 cents in New Orleans.

New York Market

(Continued from Page 111)

ness actually handled is now for export accounts or for inter-refinery movement, but buyers in both classes show no hesitancy in meeting market quotations. So brisk is the demand that several refiners have their entire producing capacity booked ahead through all or a part of May.

PRICES OF REFINED PRODUCTS

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of April 6, 1937

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 oct. and below (3d gr.)	.05	.05¼
63-67 octane	.05⅜	.05½
68-70 octane (regular)	.06	.06⅛
60-62 400 grades:		
62 oct. and below (3d gr.)	.05	.05¼
63-67 octane	.05⅜	.05½
68-70 octane (regular)	.06	.06⅛
64-66 375	.05¼	.05½
68-70 360	.05⅜	.05⅝

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.05	.05¼
63-67 octane	.05⅜	.05½
68-70 octane (regular)	.06	.06⅛
60-62 400	.05	.05¼
64-66 375	.05¼	.05½

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

U. S. Motor grades:		
62 octane and below	.05⅜	.05½
63-67 octane		.05¾
68-70 octane (regular)		.06¼

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:		
62 octane and below		.05¼
63-67 octane	.05⅞	.06
68-70 octane (regular)		.06¼

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.05	.05⅛
63-67 octane	.05⅜	.05½
68-70 octane (regular)	.06	.06⅛
60-62 400 grades:		
62 octane and below	.05	.05⅛
63-67 octane	.05⅜	.05½
68-70 octane (regular)	.06	.06⅛
64-66 375	.05	.05⅛
68-70 360	.05¼	.05⅜

PENNSYLVANIA (inland refineries)—

58-60 U. S. Motor:		
Below 60 octane		.04¾
60-64.9 octane	.06¾	.07
65-70 octane	.07	.07¼
64-66 375		.05¼
68-70 350		.05⅝

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.07½	.08½
58-60 400, 65 oct. and higher	.08¼	.09¼

EAST COAST (domestic)—

U. S. Motor below 60 octane:		
*New York (Bayonne)		.06¾
Baltimore		.06¾
U. S. Motor, 60-64.9 octane:		
*New York (Bayonne)		.07
Philadelphia	.07	.07¼
Boston		.07¼
Baltimore	.07	.07¼
Charleston, S. C.		.07¼
U. S. Motor, 65 and above:		
*New York (Bayonne)		.07¼
Philadelphia	.07¼	.07½
Boston		.07½
Baltimore	.07¼	.07½
Charleston, S. C.		.07½

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05¾	.05⅞
60-64.9		.06
65 octane and higher	.06⅛	.06¼

Naphtha

PENNSYLVANIA (inland refineries)—

50-52 450 (blending)	.04⅝	.04¾
52-54 450 (blending)	.04⅝	.04¾
54-56 450 (blending)	.04¾	.04⅞

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.03⅛
Grade 18-55		.03¾
Low vapor pressure grade:		
*14-pound v.p. (max.)	.04⅛	.04¼
*12-pound v.p. (max.)		.04¾

*Nominal.

NORTH TEXAS—

Grade 26-70		.03⅛
Grade 18-55	.03⅝	.03¾

CALIFORNIA—

75-85 375-390	.06¾	.07½

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70	.03⅜

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110 flash, 540-550 e.p.	.04⅛	.04¼
41-43 gr., 300-350 i.b.p., 110-125 flash, 500-520 e.p.	.04¼	.04⅜
46-48 gr., 210-230 i.b.p., 480 max. e.p.	.04⅞	.05

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.04⅛	.04⅜
42-44	.04¼	.04½

NORTH TEXAS—

41-43	.04⅛	.04⅜

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43	.04⅜	.04½

ARKANSAS (Ark., N. La., Miss. del.)—

41-43	.04⅝	.04¾

PENNSYLVANIA (inland refineries)—

45	.04⅞
46	.05
47	.05⅛

CHICAGO (Based on Group 3)—

41-43	.04⅛	.04¼
42-44	.04¼	.04½

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.04	.05

NEW YORK (Bayonne, N. J.)—

41-43	.05½

***GULF COAST (domestic)—**

41-43		.05⅛

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

No. 1 prime white, 38-42	.03⅞	.04
No. 1 straw, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03¼	.03⅜
No. 2 dark, 32-36	.03¼	.03⅜
No. 3, zero to 15, 28-32	.03⅛	.03¼
No. 3, 15 and above, 28-32	.02⅞	.02⅝

NORTH TEXAS—

No. 1 prime white, 38-42	.03⅞	.04
No. 1 straw, 38-40	.03¾	.03⅞

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36	.03⅜	.03½

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36	.03⅝	.03¾

CHICAGO (based on Group 3)—

No. 1 prime white, 38-40	.03⅞	.04⅛
No. 1 straw, 38-40	.03⅝	.03¾
No. 2 straw, 32-36	.03½	.03⅝
No. 2 dark, 32-36	.03¾	.03½
No. 3 zero to 15, 28-32	.03⅜	.03½
No. 3, 15 and above, 28-32	.02⅝	.02¾

NEW YORK (Bayonne, N. J.)—

*No. 1		.05¾
*No. 2		.05
*No. 4		.04¾

*Barge deliveries one-eighth to one-fourth cent under above, tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal.; fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02¾	.02⅞
No. 4, low cold test, 24-28	1.10	1.15
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.87½	.92½
Below 18 fuel oil, industrial	.80	.87½

NORTH TEXAS—

U.G.I. gas oil	.02¾	.02⅞
No. 4, low cold test, 24-28	1.10	1.15
No. 5, low cold test, 18-22	.87½	.92½
Below 18 fuel oil, industrial	.80	.85

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

10-14 fuel oil, industrial	.75	.82½

ARKANSAS (Ark., N. La., Miss. del.)—

10-14 fuel oil, industrial	.70	.72½

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝	.02⅞
No. 4, low cold test, 24-28	1.10	1.15
No. 4, 15 and above, 24-28	.90	.95
No. 5, low cold test, 18-22	.87½	.92½
No. 6, low cold test, 10-16	.80	.85

PENNSYLVANIA (inland refineries)—

36-40	.04⅜	.04½

CALIFORNIA—

Los Angeles:		
30-34 gas oil, per bbl.	1.10	1.25
24 plus diesel per bbl.	1.10	1.25
24 plus diesel (bunkers)	1.15	1.35
12-16 (bunkers at tidewater)	.90	1.00
10-16 (cargo lots)	.75	.95
12-17 (tankers)	.75	.95
San Joaquin Valley:		
10-18 (tankcars)	.70	.90
24 plus diesel, per bbl.	1.00	1.35
San Francisco:		
27 plus diesel		1.40
24 plus diesel (bunkers)		1.40
10-16 (bunkers)		1.00

GULF COAST—

28-30 gas oil	.03⅝	.04
28-30 diesel (bunkers)		1.65
Bunkers (bulk cargoes)		.95
Bunker C (bunkers)		1.00

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04¾
28-30 diesel (lighterage 6¼c per bbl.)		1.85
28-30 diesel (tankcars)		.04¾
*Bunker C (to ocean-going ships in N. Y. harbor)		1.20
Industrial fuel (tankcars)		.04½

*Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

Bright Stocks:	
190-200 D, 15-25	.23
150-160 D, 0-10	.20
150-160 D, 15-25	.19½
150-160 E, 15-25	.19
100-110 D, 0-10	.18
Steam refined:	
631 green (treated)	.17½
600 dark green (untreated)	.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 145-50 at 210, 540-550 flash):		
10 pour test	.28	.28½
15 pour test	.27	.27½
20 pour test	.26	.26½
25 pour test	.25	.25½
Steam refined:		
600		.17½
650		.19
600 Pennsylvania flash		.20
630 flash		.24
600 Warren E filtered		.20

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:		
150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-3½		.13
400-3½		.14
100-2½ paraffin oil		.05¾
15-20 Cold Test:		
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.11½

GULF COAST—

Pale Oils:		
200-3	.07	.07¼
300-3	.07½	.07¾
500-3½	.08⅛	.08¾
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	.10
Red Oils:		
200-5-6		.07
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)

Pale Oils:		
100-2½-3	.07	.08
200-2½-3	.07	.08
300-2½-3	.07	.08
400-3-4	.09	.11
450-3-4	.09	.11
550-3-4	.09	.11
600-3-4	.09	.11
Red Oils:		
200-4-5	.07	.08
300-5-6	.07	.08
350-5-6	.10½	.11½
400-5-6	.10½	.11½
450-5-6	.10½	.11½
500-5-6	.10½	.11½
600-5-6½	.10½	.11½
700-6½ plus	.10½	.11½
750-6½ plus	.10½	.11½
900-6½ plus	.10½	.11½

PENNSYLVANIA—

150 vis. at 750° F. color, 400-405 flash:		
Zero pour test	.24½	.25
10 pour test	.23½	.24
15 pour test	.23	.23½
25 pour test	.22	.22½
180 vis. at 70° F., 3 color:		
25 pour test	.24½	.25
200 vis. at 70° F., 3 color:		
Zero pour test	.28	.28½
10 pour test	.27	.27½
15 pour test	.26½	.27
25 pour test	.25½	.26

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale		.02¾

PENNSYLVANIA (inland refineries)—

122-124 (a.m.p.) w.c. scale	.0265	.0270
124-126 (a.m.p.) w.c. scale	.0270	.0275

NEW YORK—

Wax in bags fully refined:		
122-125 (a.m.p.) wax		.0445
125-127 (a.m.p.) wax		.0455
128-130 (a.m.p.) wax		.0480
130-132 (a.m.p.) wax		.0505
133-135 (a.m.p.) wax		.0535
135-137 (a.m.p.) wax		.0560
124-126 (a.m.p.) w.s.	.0250	.0255
124-126 (a.m.p.) y.s.	.0260	.0265
Petrolatum in barrels, carload lots:		
Dark green		.01⅞
Amber	.02⅞	.03
Extra amber	.03	.03⅛
Lily white	.06⅝	.06¾
Snow white	.07¾	.07⅞
Cream	.05⅝	.05¾

Export Prices

GASOLINE

GULF COAST—

U. S. Motor		.05¾
60-62 400		.05⅞
61-63 390	.05⅞	.06
64-66 375	.06⅛	.06¼

LOS ANGELES—

U. S. Motor grades:		
53-55 octane		.04¾
55-65 octane	.04¾	.05
65-67 octane		.05
67-69 octane		.05¼
Above 69 octane	.05½	.06

KEROSENE

GULF COAST—

41-43 prime white		.05⅛
41-43 water white		.05⅜
44 water white		.05⅝

LOS ANGELES—

41-43 water white	.04½	.05

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.a.s. in bbls.)—

Cylinder Stocks:	
600 Warren E	.26⅛
600 S.R. unfiltered	.24
630 S.R. unfiltered	.25½
600 flash, S.R.	.26½
630 flash, S.R.	.30
Bright Stocks:	
8 color	.32
6½ plus color in dilution	.31½

NEUTRAL OIL

200-3 color	.31½
150-3 color	.27½

PARAFFIN WAX

NEW YORK (prices per pound)—

123-126 a.m.p.		.04125
125-127 a.m.p.		.0425
128-130 a.m.p.		.0450
133-135 a.m.p.		.0525
135-137 a.m.p.		.0550
Crude scale:		
124-126 w.s.	.0260	.0270
124-126 y.s.	.0245	.0250

CRUDE OIL PRICES

Oklahoma, Kansas, North Central and East Central Texas

(January 28, 1937)

East Texas*	$1 27
Van, Tex.†	1 10
Camp Hill, Tex.	1 27
Cass County, Tex.‡	1 25
Talco	73
Altus and Tipton, Okla.§	1 20
Other fields (see gravity table).	

*All companies. †Humble Oil & Refining Co.; Pure Oil Co. ‡Texas Co. §Gulf Oil Co. Talco by Humble Oil & Refining Co.

West Texas

See gravity table.

Pecos County*	.91
Pecos shallow†	.81

*Shell Petroleum Co., Gulf Pipe Line Co., and Humble Oil & Refining Co. †Shell Petroleum Corp.

Gulf Coast

(January 28, 1937)

Choctaw and Darrow, La. See note below	
Clay Creek, Tex.	$1 00
Garden Island, La.	1 37
Cleveland, Tex.	1 27
Hardin, Tex.	1 15
Tomball, Tex.	1 30
Lafitte, La.	1 24
Livingston, Tex.	1 27
Satsuma	1 20
Heyser, light (Nov. 1, 1936)	1 15
Heyser, heavy (Nov. 1, 1936)	.90
Placedo (Nov. 1, 1936)	.90
Welsh, La.	.98
Tepetate (La.) (Jan. 4, 1937)	1 12

Greta, Refugio, O'Connor, McFadden, Saxet, Segno, Taft, Tomoconnor and Plymouth take same gravity prices as Gulf Coast, Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree. Segno, Texas, takes Gulf Refining Co.'s Gulf Coast prices. Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36.

Rocky Mountain States

(Effective January 28, 1937)

Iles, Colo., light*	$1 18
Iles, Colo., heavy*	1 12
Greybull, Wyo.*	1 30
Torchlight, Wyo.*	1 30
Grass Creek, Wyo., light.*†	1 30
Grass Creek, Wyo., heavy (Nov. 4, 1936)*†	.62
Hamilton Dome, Wyo. (Nov. 4, 1936)*	.57
Elk Basin, Wyo., light*†	1 30
Frannie, Wyo., heavy*	.62
Frannie, Wyo., light	.82
Hogback, N. Mex.*	1 33
Pondera, Mont. (Jan. 26, 1936)*	1 05
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†	1 23
Rock Creek, Wyo.†	1 20½
Lea County, N. M. (see West Texas gravity table).	
Artesia, N. Mex.	.90
Maljamar, N. Mex.	.90
Canon City and Florence, Colo.	1 10
Florence, Colo.	.98
Lance Creek, Wyo.	.97
Sunburst, Mont. (June 5, 1936)	1 20
Cat Creek, Mont.	1 40
Cut Bank, Mont.	1 35

*Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co. Cut Bank by Toronto Pipe Line Co.

Middle Western States

OHIO OIL CO.
(Effective January 28, 1937)

Lima	1 25
Illinois	1 35
Princeton, Ind.	1 35
Midland, Mich.	1 42
West Branch, Mich.	1 26
Buckeye (March 16, 1937)	1 39½
Arenac, Mich.	1 26
Muskegon, Mich.	1 00
Eastern Kentucky:	
Big Sandy River	1 42
Kentucky River	1 50
Western Kentucky	1 40

Midland, Mich., price posted by Simrall Corp. and Pure Oil Co. includes Greendale, Porter, Beaverton, Crystal and equal grades. West Branch and Arenac by Simrall Corp., effective January 29. Eastern Kentucky crude purchased by Ashland Refining Co. Ashland, Ky. Buckeye posted by Simrall Corp. and Pure Oil Co.

Southwest Texas

(January 28, 1937)

Pettus	1 37
Salt Flat, Darst Creek, Hilbig, Carroll Clark, Zoboroski	1 09
Luling	1 00
Lytton Springs	1 12

Saxet and Taft take same gravity table as Gulf Coast.

North Louisiana and Arkansas

Smackover, all grades	$ .90
Tullos and Urania	1 02
El Dorado East field	.90
Union County, Ark.	.90
Ouachita County, Ark.	.90

Eastern States

TIDE WATER PIPE LINE CO.
(Effective Feb. 24, 1937)

Bradford, Pa.	$2 67
Allegany, N. Y.	2 67

SOUTH PENN OIL CO.
(Effective Feb. 24, 1937)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	2 67
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	2 42
Pennsylvania Grade Oil in Eureka Pipe Line lines	2 37
Pennsylvania Grade Oil in Buckeye Pipe Line lines	2 22
Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Sept. 18, 1936)	1 32

PENNZOIL CO.
(Effective Feb. 24, 1937)

Pennsylvania Grade Oil in National Transit Lines:	
Group A Includes Cochran, Franklin, Hamilton and Doolittle districts.	2 67
Group B Includes Tidioute district.	2 66
Group C Includes Turkey and Tidioute districts.	2 65
Group D Includes Bear Creek and Porkey districts.	2 64
Group E Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	2 61

Price depends on lengths of pipe line haul to plant at Oil City.

PURE OIL CO.
(Effective Feb. 24, 1937)

Cabin Creek, W. Va.	2 37
Bradford Hollow, W. Va.	2 37
Kelly Creek, W. Va.	2 37

Canada

Ontario (Sept. 9, 1933)*	
Petrolia	$2 10
Oil Springs	2 17
Turner Valley, Alberta province (Dec. 16, 1936):†	
Clear naphtha	$2 60
Discolored naphtha, 65 gravity and higher	2 36
Discolored naphtha and crude oil, 40-40.9 gravity	1 55
Increasing 3 cents for each degree of gravity with top price for 64-64.9 gravity	2 27

These prices delivered field tankage.
*Imperial Oil, Ltd.
†Imperial Oil, Ltd., and Regal Oil & Refining Co. On crude oil alone British American Oil Co. posted above prices on December 9, 1936.

Mexico

Panuco*	$1 24

*In U. S. currency, f.o.b. ship, based on February spot market transactions.

Texas Wildcats

(Continued from Page 107)

Tillman et al No. 1 Jones, J. Helmstutter Sur. No. A-1269. Drk.

Montague County

Denver P. & R. Co. No. 1 Copeland, Blk. 162, Kembro Sur. Drlg. 4,000 ft.
Montague Oil Co., Inc., No. 1 W. J. Bell, sec. 2,882, T.E.&L. Sur. Fsg. csg. 4,000 ft.
Selby O. & G. Co. No. 1 J. M. Batts, M. B. Tatum Sur. A-740. Loc.
Ventex Investments, Ltd., No. 1 S. E. Bell, sec. 11, M.E.P.&P. Sur. Drlg. 2,120 ft.

Rocky Mountain Runs

Estimated daily average production in the week ending April 3 follows:

WYOMING	
Salt Creek	16,280
Big Muddy	1,410
Byron	1,200
Dallas Derby	530
Elk Basin	350
Frannie	1,950
Garland	2,550
Grass Creek	1,350
Hamilton dome	1,020
Hidden dome	530
LaBarge	1,280
Lance Creek	10,710
Lost Soldier	830
Medicine Bow	2,800
Oregon Basin	3,280
Osage	740
Quealy dome	650
Rock River	2,970
Miscellaneous	1,020
Total Wyoming	51,450
MONTANA	
Buckley Border	190
Cat Creek	580
Cut Bank	9,010
Dry Creek	30
Kevin-Sunburst	3,740
Lake Basin	30
Pondera	1,140
Total Montana	14,720
COLORADO	
Florence	190
Fort Collins and Wellington	270
Iles dome	3,090
Moffat	440
Orchard	20
Rangely	70
Tow Creek	120
Total Colorado	4,200
NEW MEXICO	
Cooper	7,290
Eaves	1,100
Eunice	30,610
Hardy	910
Hobbs	21,670
Jal	1,540
Langlie	1,210
Lynch	900
Lynn	180
Mattix	990
Monument	29,100
Penrose	1,670
Skelly	1,120
Artesia	3,350
Gettv	550
South Eunice	1,070
Miscellaneous	1,480
Total New Mexico	104,440
Total Rocky Mountain region	174,810

Crude Prices by Gravities

	Oklahoma-Kansas 1	Oklahoma-Kansas 2	North and Central Texas 3	East Central Texas (Mexia district) 4	North Louisiana-Arkansas 5	Gray County, Texas 6	Hutchinson-Carson counties, Texas 7	Rodessa, Louisiana-Texas and Panola County, Texas 8	Conroe, Tomball, Raccoon Bend, Satsuma, Texas 9	Gulf Coast 10	Gulf Coast 11	West Texas except Pecos County, Lea County, N. Mex. 12	Mirando district, Texas 13	Marion County, Texas 14	Government Wells, Texas 15	Anahuac, Texas 16	White Castle, Louisiana 17	Iowa, Louisiana 18	Cayuga, Texas 19
Bel. 18										$ .90									
18-18.9										.92									
19-19.9										.94						$ .92	$ .94	$ .84	
20-20.9										.96	$ .95			$ .90		.94	.96	.86	
21-21.9										.98	.98			.93		.96	.98	.88	
22-22.9										1 .01	1 .01			.96		.98	1 .01	.91	
23-23.9										1 .04	1 .04			.99		1 .00	1 .04	.94	
24-24.9										1 .07	1 .07		1 .02		1 .02	1 .02	1 .07	.97	
Bel. 25		$ .98			$ .90			$ .93						$ .90					$ .88
25-25.9		1 .00			.92			.95		1 .10	1 .10	$ .78	1 .05	.92		1 .04	1 .10	.99	.90
26-26.9		1 .02			.94			.97		1 .13	1 .13	.80	1 .08	.94		1 .06	1 .13	1 .03	.92
27-27.9		1 .04			.96			.99		1 .15	1 .15	.82	1 .10	.96		1 .08	1 .15	1 .05	.94
28-28.9		1 .06			.98			1 .01		1 .17	1 .17	.84	1 .12	.98		1 .10	1 .17	1 .07	.96
Bel. 29	$1 .06		$ .96	$1 .03					$1 .20										
29-29.9	1 .08	1 .08	.98	1 .05	1 .00			1 .03	1 .22	1 .19	1 .19	.86	1 .14	1 .00		1 .12	1 .19	1 .09	.98
30-30.9	1 .10	1 .10	1 .00	1 .07	1 .02			1 .05	1 .24	1 .21	1 .21	.88	1 .16	1 .02		1 .14	1 .21	1 .11	1 .00
31-31.9	1 .12	1 .12	1 .02	1 .09	1 .04			1 .07	1 .26	1 .23	1 .23	.90	1 .18	1 .04		1 .16	1 .23	1 .13	1 .02
32-32.9	1 .14	1 .14	1 .04	1 .11	1 .06			1 .09	1 .28	1 .25	1 .25	.92	1 .20	1 .06		1 .18	1 .25	1 .15	1 .04
33-33.9	1 .16	1 .16	1 .06	1 .13	1 .08			1 .11	1 .30	1 .27	1 .27	.94	1 .22	1 .08		1 .20	1 .27	1 .17	1 .06
34-34.9	1 .18	1 .18	1 .08	1 .15	1 .10			1 .13	1 .32	1 .29	1 .29	.96	1 .24	1 .10		1 .22	1 .29	1 .19	1 .08
Bel. 35						$ .96	$ .91												
35-35.9	1 .20	1 .20	1 .10	1 .17	1 .12	.98	.93	1 .15	1 .34		1 .31	.98	1 .26	1 .12		1 .24		1 .10	
36-36.9	1 .22	1 .22	1 .12	1 .19	1 .13	1 .00	.95	1 .17	1 .36		1 .33	1 .00	1 .28	1 .14		1 .26			
37-37.9	1 .24	1 .24	1 .14	1 .21	1 .16	1 .02	.97	1 .19	1 .38		1 .35	1 .02	1 .30	1 .16		1 .28			
38-38.9	1 .26	1 .26	1 .16	1 .23	1 .18	1 .04	.99	1 .21	1 .40		1 .37	1 .04	1 .32	1 .18		1 .30			
39-39.9	1 .28	1 .28	1 .18	1 .25	1 .20	1 .06	1 .01	1 .23	1 .42		1 .39	1 .06	1 .34	1 .20		1 .32			
40,over	1 .30	1 .30	1 .20	1 .27	1 .22	1 .08	1 .03	1 .25	1 .44		1 .41	1 .08	1 .36	1 .22		1 .34			

Column 1—Companies posting are Barnsdall, Bell, Champlin, Continental, Cushing, Derby, Dickey, Eason, El Dorado, Empire, Falcon, Globe, Gulf, Johnson, Kanotex, National, Phillips, White Eagle, Stanolind, Sunray, Texas, Sun, Vickers and Wilcox.
Column 2—Anderson & Prichard, Carter, Cosco, Deep Rock, Magnolia, Mid-Continent, Pure, Rock Island, Shell, Sinclair, Skelly and Tide Water.
Column 3—All purchasers.
Column 4—Humble Oil & Refining Co. and Sinclair Crude Oil Purchasing Co.
Columns, 5, 6, 7 and 8—All purchasers.
Column 9—Humble Oil & Refining Co. and Sun Oil Co. Tide Water Oil Co.'s schedule starts at 35 degrees, $1.34 with 2-cent spread up to 40 and over at $1.44. (Raccoon Bend prices are for deep sand oil.)
Column 10—The Texas Co. (Gulf Refining Co. pays same prices up to and including 34 gravity, but continues its 2-cent spread up to 40 and over at $1.41.)
Column 11—Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Sun Oil Co.
Column 12—All purchasers.
Column 13—Humble Oil & Refining Co.
Column 14—Magnolia Petroleum Co.
Column 15—Sun Oil Co.
Column 16—Gulf Refining Co.
Columns 17 and 18—Shell Petroleum Corp.
Column 19—Tide Water Oil Co.

MARKET RECORD, ACTIVE OIL STOCKS

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1937 High	1937 Low	Week ended April 3 Sales	Week ended April 3 High	Week ended April 3 Low	Week ended April 3 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1936	1936 High	1936 Low	1935 High	1935 Low
114⅞	101	1,400	108¾	106	106¾	Amerada Corp.	788,675	N.P.	50cQ	1-30-37	$2.00	125½	75	80	48½
37	30⅛	10,500	34⅞	33½	34¼	Atlantic Refining	2,664,904	$25	25cQ	3-15-37	1.25	35⅛	26⅝	28	20½
43⅜	35⅞	12,700	41	37¾	39¾	Barber Co.	387,149	$10	50c	12-10-36	.50	38½	21	22½	11¾
35¼	26⅛	24,800	33⅝	31¼	33	Barnsdall Oil Co.	2,131,090	$5	25cQ	5-1-37	.80	28¼	14⅛	14¾	5⅞
20⅞	15	37,400	16	15	15⅛	Columbia Gas & Elec.	11,610,036	N.P.	20c	11-16-36	.40	23⅜	14	15¾	3⅝
17¾	15⅝	88,700	17⅝	16⅜	17⅝	Consolidated Oil Corp.	13,983,287	N.P.	20cQ	5-15-37	.80	17¼	11½	12¼	6½
45½	40¼	23,700	45¼	42¼	45⅛	Continental Oil of Delaware	4,682,671	$5	25cQ	3-29-37	1.50	44⅞	28⅛	35	15⅛
17⅝	12½	17,500	15½	14	14⅜	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	13⅞	6⅜	7	1½
35⅜	29¼	8,300	34⅛	31⅞	33	Mid-Continent Petroleum	1,843,872	$10	75cSA	12-1-36	1.15	30⅞	17¼	20½	9½
33⅜	26⅞	6,700	33¾	32	33¾	Mission Corporation	1,399,345	N.P.	....	.....	.45	29⅞	16¾	17¾	10⅜
93½	62	5,300	93½	86	89¾	National Supply of Delaware	382,591	$25	....	5-15-31	....	75½	19⅞	20⅞	9
22¾	17⅛	70,900	22¾	20½	22½	Ohio Oil Co.	6,563,377	N.P.	35cSA	12-15-36	.60	18	12⅛	14¼	9¼
29	22¼	4,300	28	26¼	27½	Pacific Western Oil	1,000,000	N.P.	65c	12-18-36	.65	23½	11¾	14	6¾
4½	2¾	1,600	3½	3¼	3¼	Panhandle P. & R.	198,770	N.P.	....	.....	....	4¼	1⅜	1⅞	½
58½	49½	25,000	58½	54½	58½	Phillips Petroleum	4,152,836	N.P.	50cQ	3-1-37	2.50	52⅜	38⅛	40	13¾
28¼	24¼	25,100	28¼	26¼	27⅞	Plymouth Oil Co.	1,050,000	$5	35cQ†	3-31-37	.90	27¾	11⅞	13	6½
24⅜	19½	39,500	21⅜	20¼	21	Pure Oil Co.	3,038,370	N.P.	....	9-1-30	....	24⅞	16	17	5⅞
51⅝	40¼	40,500	53¼	46¾	53¼	Seaboard Oil of Delaware	1,244,283	N.P.	25cQ	3-15-37	1.00	44	30½	36⅞	20¾
34¾	26⅞	9,800	32⅝	31½	32⅝	Shell Union Oil	13,070,625	N.P.	25c	12-15-36	.25	28¼	14¾	16½	5½
105⅜	102	500	103⅜	103¼	103⅜	Shell Union Oil 5½% pfd.	400,000	$100	26⅛c	12-15-36	28.87½	127½	102	111	63⅛
4⅛	3½	3,300	4⅛	3⅞	4⅛	Simms Petroleum	461,698	$10	50c liq.	1-9-37	2.25 liq.	6¾	3½	18¾	4¾
56	42	15,300	58¼	53	58⅛	Skelly Oil	1,008,514	$15	....	12-15-30	.. .	47⅜	19½	20½	6½
19½	16¼	97,000	19½	18⅜	19½	Socony-Vacuum	31,151,075	$15	25cSA	3-15-37	.70	17½	12½	15¾	10⅝
50	43¼	17,500	48	45¾	46¾	Standard Oil of California	13,014,754	N.P.	30cQ†	3-15-37	1.20	47⅝	35	41⅛	27¾
50	44⅜	14,900	47½	45¼	46⅞	Standard Oil (Indiana)	15,215,677	$25	40cQ†	3-15-37	2.40	48½	32¾	33⅜	23
32	31	No sales	....	....	....	Standard Oil of Kansas	200,000	$10	$1	12-26-36	1.00	31	25	32	20
76	67¾	28,300	73¼	70⅛	71⅜	Standard Oil of New Jersey	25,856,081	$25	$1.25SA†	12-15-36	2.00	70⅜	51⅛	52⅜	35¾
77½	68	1,200	71	69½	71	Sun Oil	1,733,013	N.P.	25cQ	3-15-37	$1 & 6% Stk.	91	70	77	60½
62⅛	50⅜	106,900	62⅛	58½	61⅜	Texas Corp.	9,340,069	$25	50cQ	4-1-37	1.50	55¼	28⅞	30¼	16½
9⅝	7⅞	32,300	9⅜	8⅝	9¼	Texas Gulf Producing Co.	888,113	N.P.	5c	12-15-36	.05	8⅞	4⅜	4⅜	2½
16⅝	13⅛	30,300	16½	14¾	16½	Texas Pacific Coal & Oil	880,703	$10	10c	3-1-37	.25	15¼	7½	9¼	3¼
21⅝	19¼	17,800	20¼	19⅛	19⅞	Tide Water Associated	5,642,342	N.P.	15cQ	3-1-37	.70	21⅜	14¾	15⅞	7⅝
108	105⅛	600	106⅜	106⅜	106⅜	Tide Water Associated pfd.	626,221	$100	$1.50Q	1-2-37	6.00	106½	100⅝	104½	84
28¼	24⅛	10,900	26½	25⅛	26	Union Oil of California	4,386,070	$25	25cQ	11-10-36	1.00	28½	20⅜	24	14⅜
31¼	26⅝	1,700	29¾	28¾	29	Union Tank Car Co.	1,200,000	N.P.	40cQ	3-1-37	1.20	31⅝	22⅝	26½	20⅞
6¼	4½	3,700	5½	5⅛	5⅜	Wilcox Oil & Gas	424,839	$5	....	5-10-28	....	5¼	2¾	3⅛	1

*Ex-dividend. †Includes extras.

New York Curb Exchange

1937 High	1937 Low	Week ended April 3 Sales	Week ended April 3 High	Week ended April 3 Low	Week ended April 3 Close	Stocks—	Total shares outstanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1936	1936 High	1936 Low	1935 High	1935 Low
21¾	16	3,200	19⅝	18¼	18½	Bridgeport Machine Co.	260,000	N.P.	$1	12-21-36	$1.00	21	13¼	14⅛	3¾
51½	46	150	49½	48½	49½	Buckeye Pipe Line Co.	200,000	$50	$1Q	3-15-37	3.25	50	39¾	42½	30½
2¾	2⅛	3,600	2⅜	2¼	2¼	Carib Syndicate	799,020	25c	....	.....	....	4⅞	1⅞	4¼	1⅝
115½	110¼	300	114	113	114	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	3-29-37	7.00	124¾	105	157	115
5⅜	4	43,300	4⅜	4	4⅛	Cities Service	37,804,394	N.P.	....	6-1-32	....	7⅜	3	3¼	¾
4⅝	2¼	5,100	2⅝	2¼	2⅜	Cosden Oil	399,687	$1	....	.....	....	4½	1½	1½	¼
38	28½	20,800	31½	28½	30⅞	Creole Petroleum	6,974,356	$5	25cSA	12-15-36	.50	39	19⅞	23¾	10
18⅝	15⅝	3,000	16⅝	15⅝	16⅝	Darby Petroleum	351,390	$5	25cSA	1-15-37	.50	18⅛	9	8⅞	4
7⅞	5¼	1,400	6⅞	6¼	6¼	Derby Oil & Refining	263,162	N.P.	....	.....	....	6¾	1⅞	2	¾
47½	37	50	37	37	37	Eureka Pipe Line	50,000	$50	$1Q	11-2-36	4.00	47½	38½	38	33¼
63½	53¾	6,800	59½	56	58¼	Gulf Oil Corp.	9,076,202	$25	25cQ	4-1-37	1.50, 100% Stk.	59	36	74¾	50¼
87	77½	4,000	88⅜	81	82⅛	Humble Oil & Refining	8,923,935	N.P.	37½cQ	4-1-37	1.50	80	57	64	44
24¼	21	4,400	23⅛	22⅜	23⅛	Imperial Oil of Canada	26,919,871	N.P.	62½cSA†‡	12-1-36	1.25	24½	19¾	22½	15⅜
15	7¾	1,700	14½	13½	13¾	Indiana Pipe Line	300,000	$10	30cSA	5-15-37	.80	9¾	5½	6⅛	3⅝
39½	33¾	4,300	37	35⅝	36⅜	International Petroleum	14,247,088	N.P.	$1.25†‡	12-1-36	2.50	39⅝	32⅝	39¾	28
15¼	12⅛	7,400	12⅞	12⅜	12½	Louisiana Land & Exp.	3,000,000	N.P.	10cQ	3-15-37	.50	15⅜	9⅞	11⅝	4⅜
26¾	16⅛	28,200	26¾	22¾	24¼	Lion Oil Refining	270,000	N.P.	25cQ	12-26-36	.75	17¾	7⅜	8⅛	3½
14¼	11	3,100	11¼	11	11	Lone Star Gas	5,382,723	N.P.	20c	4-20-37	.60	14¼	9⅞	10⅞	4½
7⅞	6	1,500	6⅞	6⅝	6¾	Mountain Producers	1,682,182	$10	30cSA	12-21-36	.60	8⅜	5	5⅜	4⅛
19½	16½	1,200	17	16½	16⅝	National Fuel Gas	3,810,183	N.P.	25cQ	1-15-37	1.00	23	17⅜	20	11¾
11⅞	10	800	11	10⅝	10⅝	National Transit	509,000	$12.50	35cSA	12-15-36	.75	15¾	9¼	10⅝	6¾
6	4¾	No sales	....	....	....	New Bradford Oil	1,445,202	$5	15cSA	4-15-37	.10	4⅝	2⅞	3¼	2
5	3½	900	3¼	3	3	New Mexico and Arizona	1,000,000	$1	1c	12-1-36	.01	6⅝	1⅝	2½	1
11⅞	10	100	4¾	4¾	4¾	New York Transit	100,000	$5	15cSA	10-15-36	.35	6¼	4¼	4⅞	3
10¾	7½	1,100	10⅜	10	10¼	Northern Pipe Line	120,000	$10	35c	1-2-37	.40	9¾	4⅞	8	5¼
9⅞	5½	18,000	6¾	6	6¾	Pantepec Oil	1,608,700	N.P.	....	.....	....	10⅛	3¼	4⅜	1¼
13¾	7⅝	7,700	9¼	7⅝	8	Root Petroleum Co.	336,045	$1	25c	11-2-36	.50	19¼	4½	5	1½
6½	4	4,300	5⅛	4½	5⅛	Ryan Consolidated	296,931	N.P.	....	.....	....	4¾	1⅞	2½	⅝
48	43½	400	44¼	44	44	South Penn Oil	1,200,000	$25	60cQ†	3-29-37	2.60	44	32½	34½	21⅝
7¼	5	500	5⅞	5⅝	5⅝	Southern Pipe Line	100,000	$10	20cSA	3-1-37	.25	7⅞	3¼	5	3⅞
42	34	50	34	34	34	South West Penna. Pipe Lines	35,000	$50	50cQ	4-1-37	13.00	60	44	56	44¼
20¾	19⅛	3,000	20½	20	20	Standard Oil of Kentucky	2,604,790	$10	25cQ	3-15-37	1.35	23⅜	17⅛	24	18
13¾	11½	1,300	13¾	13	13⅝	Standard Oil of Nebraska	188,403	$25	25c	3-29-37	.25	14⅝	11	12	7¾
45	33¼	2,100	43¼	42⅞	43	Standard Oil of Ohio	753,740	$25	25cQ	3-15-37	2.00	40	21¾	23⅝	11½
4⅞	4	21,100	4⅞	4⅝	4¾	Sunray Oil	1,910,919	$1	5c	4-26-37	.10	5	2⅝	2⅞	⅞
7⅝	6⅛	2,500	6¾	6½	6½	Texon Oil & Land	336,028	$2	15cQ	3-31-37	.60	9¾	5⅜	6⅞	5

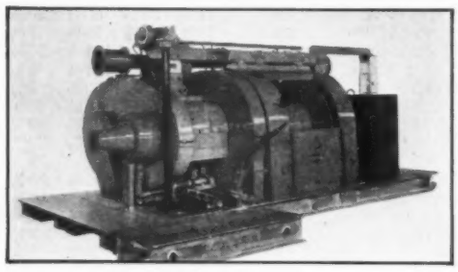
*Ex-dividend. †Includes extras. ‡Payable in Canadian funds.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

NEW OR IMPROVED EQUIPMENT

Wear on Chain Is Minimized in "Giant" Series Drawworks

The International Derrick and Equipment Co. has introduced its "Giant" series of drawworks. These units have a pump-driven oil-circulating system for the chain, which, with the use of cut-tooth sprockets and oil-tight chain-housings, reduces chain wear to a minimum. The oil is pumped from a reservoir to the chain housings, sprayed on the chain, and returned to the reservoir, keeping fresh clean oil on the chain at all times. The chain-housings are completely sealed, protecting the chain from sand, grit, or other foreign materials. This drawworks has a unit-type frame, heavy-duty self-aligning roller bearings for the



line- and drum-shafts, water-cooled brake flanges, compound equalizing brakes, and a floor-type cat-line rope roller.

The "Big Giant" weighs over 40,000 pounds, and is designed for drilling deep wells. A large drum spool increases the life of the wire rope and provides greater hoisting speeds at a given chain speed. The "Junior Giant," shown in the illustration, weighing approximately 35,000 pounds, is designed for drilling to 9,000 feet. The "Little Giant," built with the same features as the larger models, is designed for drilling to 6,000 feet. It weighs 20,000 pounds.

Continuous Welding Permitted by Controlled Electric Arc

Time saving, cost cutting and increased efficiency are features of an improved electric method of hard facing and hard setting perfected and tested to practical use by Osage Metal Co., of Oklahoma City, Okla.

A controlled electric arc permits continuous welding, with no wait for the metal to cool. Formerly, if the arc had been applied to the Tungsten carbide, the particles would have broken down to such an extent as to make the tool useless. In the new method an indirect arc gives a heat of greater intensity without burning or oxidizing the metals being compounded into a cutting tool. Drillers have tested the process, according to the manufacturer, and have found that the rapid application of the particles allows the small pieces to gravitate to the bottom of the molten deposit with little change in identity.

Bulletins, Booklets and Other Literature for the Trade

In a new bulletin, No. 6,165, Fairbanks, Morse & Co. describes its duplex, self-oiling pumps for handling mud and slush, clear water, petroleum products and other liquids.

A Hughes-Keenan Roustabout crane specially designed for use with International rigid-frame Tractractors is shown loading pipe in the latest number of Powertrax, published by International Harvester organization, 600 South Michigan Avenue, Chicago. Other oil field uses are suggested.

The Lummus Co., designer and construction contractor of refineries, has moved its home office in New York from 50 Church Street to the Graybar Building, 420 Lexington Avenue.

Lincoln Electric Co., Cleveland, Ohio, has for distribution a bulletin on the Shield-arc SAE welder type S-6018, engine-driven model.

Goulds Pumps, Inc., Seneca Falls, N. Y., is distributing an attractive new bulletin, No. 208, describing its "Close-Cupld" centrifugal pumps. Twenty-one sizes give a wide range of capacities and heads, 5 to 1,600 g.p.m.—up to 525 feet. The bulletin gives information on ratings, construction, specifications, dimensions, etc.

Francke Flexible Coupling

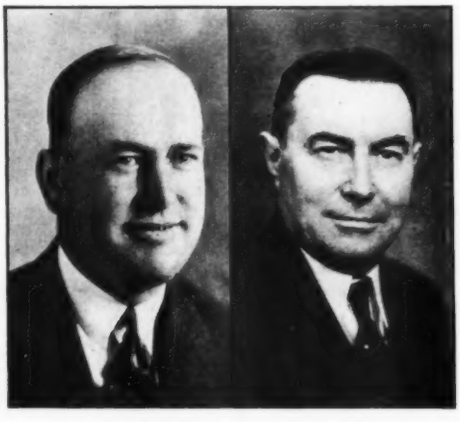
John Waldron Corp., of New Brunswick, N. J., manufacturer of Francke and Waldron flexible couplings announces a new Francke flexible coupling for the fractional horsepower transmission field. This new all-steel flexible coupling is designed for fuel pumps, generators, fans, etc., up to three-quarters horsepower at 1,800 r.p.m. and for shafts up to three-quarter inch diameter.

Two Accessions to Its Staff Are Announced by International

International Supply Co., Tulsa, has engaged R. A. Johnson as manager of its new machinery department and A. B. Harrison as district manager in the Gulf Coast area, with headquarters in Houston, Tex.

Mr. Johnson started with Continental Supply Co., working for that organization nine years in Oklahoma, Texas and Kansas. After that he was successively with International Supply Co., Oil Well Supply Co. and Weber Engine Co.

Mr. Harrison's first job was packing 1-pound cans of Mica axle grease in the grease works of



R. A. JOHNSON *A. B. HARRISON*

Standard Oil Co.'s plant at Whiting, Ind. Later he served in various other departments of the refinery, until 1918, when he joined the Sinclair Refining Co. at the East Chicago plant. He was made assistant superintendent of the Sinclair plant in Marcus Hook, Pa. In 1925 he entered the sales field, joining first Hills-McCanna Co. then Chapman Valve Manufacturing Co. and Coastal Supply Co.

Speed and Efficiency United in New Buckeye Excavator

The Buckeye Traction Ditcher Co., Findlay, Ohio, has placed on the market a line of one-half, five-eighths and three-fourths yard excavators,

with shovel, crane, dragline, clamshell and trench-hoe attachments. The new machines are known as Buckeye Clippers, Models 50, 60 and 70. Electric alloy steels, antifriction bearings, heat-treated shafting, etc., have produced a machine stripped of excess weight and designed for fast, efficient, safe operation.

Characteristic of the modern engineering found in the machine are the streamlined cab and the tubular dipper stick, combining strength and flexibility with moderate weight. One of the new departures in design is the perfected system of control by metered vacuum. All operations are controlled from a simple control panel, where small levers move easily at the touch of the operator's fingers. Almost effortless operation eliminates the natural lag that ordinarily cuts down efficiency when operators tire from handling the old types of heavy control lever machines. Among advantages of the vacuum type of control system is its freedom from trouble due to extremes of temperature, small leaks, or water in the lines. Automatic vacuum controlled brakes add to the efficiency of operation.

For the comfort of the operator there is an air-cushioned seat, convenient rack for tools, and handy compartments for order book, personal articles, etc. The cab is heated in cold weather by a hot water heater, supplied as standard equipment. Buckeye designed these machines to increase the efficiency and production of excavating work by making the operator comfortable and his job less tiresome.

Associates Wish John Krauss More Years of Leadership

Marking the twenty-fifth anniversary of his service with L. H. Gilmer Co., Philadelphia, Pa., some 60 executives, department heads and em-

JOHN S. KRAUSS

ployе representatives of this rubber belting manufacturing organization gave a testimonial dinner in the Warwick Hotel, to John S. Krauss, president.

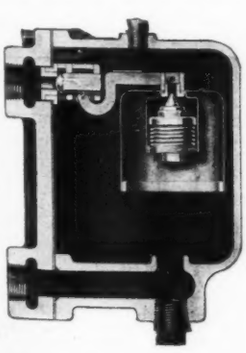
A huge floral piece carried congratulations from the United Rubber Workers Union. Another bore greetings from women employes. Thomas G. Drinkwater, president of the Workers Union, said: "May you, Mr. Krauss, be granted 25 years more of leadership so that we may gather together for your fiftieth." A week vacation with pay for factory workers in service over a year, and days off with pay for lesser periods, was announced.

Oster Elects New Officers

The following officers have been chosen by the board of directors of Oster Manufacturing Co., Cleveland, Ohio, maker of pipe- and bolt-threading equipment: R. B. Tewksbury, chairman of the board; Roger Tewksbury, president and treasurer; Arthur S. Gould, vice president; and Harry A. Maurer, secretary.

Addition to Its Line of Steam Traps Announced by Sarco

Sarco Co., Inc., manufacturer of steam specialties, 183 Madison Avenue, New York, has added to its line of steam traps the new inverted bucket trap illustrated. This trap uses the same valve mechanism that has made Sarco float-thermostatic traps well known. The trap can be furnished with integral air bypass carried inside the bucket and consisting of a regular thermostatic trap element of the balanced pressure type. According to the company this air bypass never requires setting and operates satisfactorily regardless of pressure fluctuations in the trap. The bodies are of ample size and heavy design. Traps are available in sizes one-half inch to 2 inches with bodies of cast iron for 125 pounds semisteel to 250 pounds, and cast steel up to 500 pounds steam pressure. Valve-heads and seats in all types are of stainless steel.



Value of Colloidal Graphite Is Shown in Tests of Engines

A test recently carried out by the Research Department of the Institution of Automobile Engineers (London, England) has produced authoritative figures in support of the advantages of colloidal graphited crankcase oil in the reduction of cylinder wear. Two new engines were run and left standing during alternate 15-minute periods. In addition, during the running time, each engine was revolved at 1,000 r.p.m. at light load for five minutes and at 2,000 r.p.m. and a medium load for the remaining 10 minutes.

These alternate running and rest periods were repeated 30 times and the piston-rings then measured. The wear of the engine lubricated with plain oil was 50 per cent greater than in the engine using oil containing Acheson's "dag" brand colloidal graphite.

Colloidal graphite does not replace the properties of a good plain oil. What it does, engineers say, is to "take the strain" of lubrication when bearing conditions are most severe.

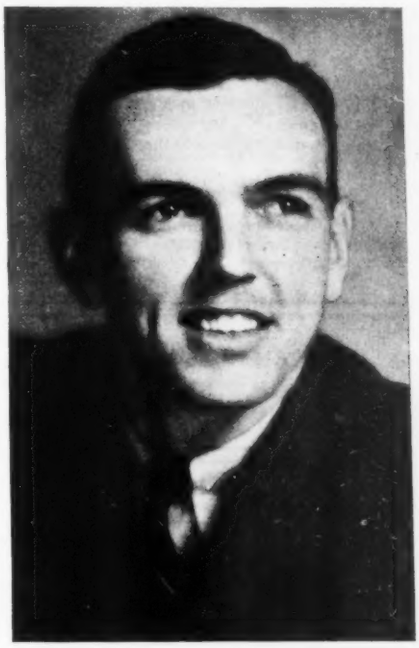
New Una Executives Announced

The executive staff of Una Welding, Inc., 1615 Collamer Avenue, Cleveland, Ohio, has been reorganized. W. K. Cooper, new vice president and general manager, was formerly assistant general manager of New York Shipbuilding Corp., Camden, N. J. A. A. Probeck, vice president and sales manager, formerly occupied an executive position with Federal Machine and Welder Co., Warren, Ohio. R. B. Fehr, new chief engineer, has held important positions in which he spent most of his time in research and production problems.

Ajax Flexible Coupling Co. has moved its Pittsburgh, Pa., sales office to 970-B Union Trust Building. J. Guy Griffith is the representative.

Martin-Decker Assigns Murphy to Pacific Coast Sales Force

Martin-Decker Corp. has appointed Tom Murphy as Los Angeles Basin and Pacific Coast salesman. After attending the University of Cali-

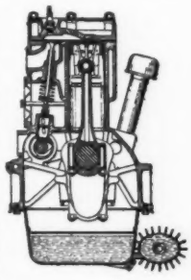


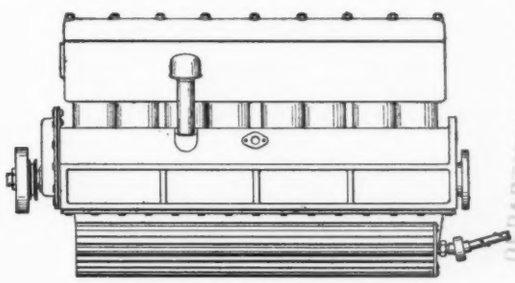
TOM MURPHY

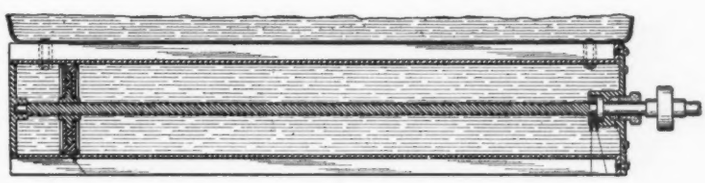
fornia at Los Angeles Mr. Murphy worked several years for one of the major oil companies and recently spent considerable time in the Martin-Decker plant in Long Beach, Calif., familiarizing himself with the design and assembly of the "Quintuplex," the Clipper and other Martin-Decker instruments.

HILTON DEVELOPS FAST OIL-EXCHANGER AND COOLER

L. D. Hilton, 711 Milby Street, Houston, Tex., has obtained a patent on a fast-operating oil-exchanger and cooler for application to the crankcase of internal-combustion engines. The device is applicable to motor cars, motor trucks or any other gas, gasoline or diesel prime mover. The purpose of the device is to provide a highly efficient means for controlling the temperature of lubricating oil in the crankcase.







Operation may be either manual, mechanical or by means of a thermostat. The control lever for the manually operated type is located under the dash or on the instrument-panel of the automobile or truck. A few turns of the lever exchanges the cool-oil content of the exchanger cylinder for an equivalent quantity of hot oil from the crankcase pump. Hot oil taken into the exchanger cylinder is quickly cooled, heat being dissipated through a series of radiating fins made integral with the outside of the cylinder.

As fast as oil from the crankcase has been cooled it is returnable to the crankcase at any time. The speed with which oil removed from the crankcase is cooled depends upon the quantity of oil exchanged and the size of the exchanger cylinder. Advantages gained by use of the Hilton oil-exchanger and cooler are said to be maintenance of lubricating oil viscosity; reduced wear on pistons, cylinder and other moving parts, owing to maintenance of a reasonable temperature; reduction of connecting-rod trouble; better compression and smooth-running engine under extreme speeds in hot weather; less carbon and fouling of plugs; increased gasoline mileage owing to better compression obtained.

The accompanying illustration shows the simplicity of the manually operated model.

Oil Man's Calendar

April

13—Los Angeles, Calif., American Petroleum Institute, Division of Production, Pacific Coast district, Biltmore Hotel.

15-16—Cleveland, Ohio, 34th semiannual meeting National Petroleum Association, Cleveland Hotel.

26-28—Hot Springs, Ark., Western Petroleum Refiners Association, annual meeting, Arlington Hotel.

May

4-9—White Sulphur Springs, W. Va., Society of Automotive Engineers, summer meeting, Greenbrier Hotel.

6-7—Columbus, Ohio, American Petroleum Institute, Division of Production, Eastern district, Deshler-Wallick Hotel.

10—Kansas City, Mo., Spring meeting Natural Gas Department, American Gas Association.

19-21—Tulsa, Natural Gasoline Association of America, annual meeting, Hotel Tulsa.

23-27—Pittsburgh, Pa., National Association of Purchasing Agents (Oil Company Buyers' Group) annual convention, William Penn Hotel.

June

1-3—Colorado Springs, Colo., American Petroleum Institute, mid-year meeting, Broadmoor Hotel.

7—Kansas City, Mo., Oil Field, Gas Well-Refinery Workers of America.

10-12—Pennsylvania Grade Crude Oil Association, annual meeting, on Great Lakes S.S. "Seeandbee," sailing from Buffalo, N. Y.

11—Santa Fe, N. M., Interstate Oil Compact Commission meeting.

14-19—Paris, France, Second World Petroleum Congress, during International Exposition.

25-26—Dallas, Tex., National Oil Scouts Association, annual meeting, Baker Hotel.

June—July

28-July 2—New York, American Society for Testing Materials, fortieth annual meeting, Waldorf-Astoria Hotel, together with fourth A.S.T.M. exhibit of testing apparatus and related equipment.

September

(?)—San Francisco, Calif., North American Gasoline Tax Conference.

27—Cleveland, Ohio, American Gas Association, nineteenth annual convention.

October

11-16—Houston, Tex., Oil-World Exposition.

26—New York, Oil Trades Association of New York.

29-30—Dallas, Tex., Mid-Continent Oil and Gas Association of Texas, annual meeting.

November

9-12—Chicago, American Petroleum Institute, eighteenth annual meeting, Stevens Hotel.

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THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

CLASSIFIED ADVERTISING

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Several Steel Derricks & Rotary Equip.
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FOR SALE: Five service stations and storage plant, wholesale and retail on U. S. highways going through Pueblo. Further information write J. L. Kimble, 326 W. 8th St., Pueblo, Colorado.

FOR SALE—1 used reconditioned No. 27 S&B chain driven sand reel mounted on steel skid complete less chain and band-wheel-sprocket. $350.00 f.o.b. Oklahoma City. I. T. I. O., Bartlesville, Oklahoma.

PIPE Yard at Lyons, Kansas. 15½" and 12½" BIGNALL KEELER PIPE MACHINES. LATHES. Cheap long lease. Write Mid-Continent Pipe & Supply Co., Oklahoma City, Oklahoma.

FOR SALE: 75—10" Standard cast iron gasket type flange unions, new and reconditioned—cheap. I. T. I. O., Bartlesville, Oklahoma.

FOR SALE, very reasonable in place as is, STEEL RIVETED STORAGE OIL TANKS, good condition, various sizes, 6,000 to 260,000 gallon, eleven in all, in recent use by large oil company in Louisville. Write E. K. ROBERTSON, STANDARD SANITARY MFG. CO., 1541 South Seventh Street, Louisville, Kentucky.

FOR SALE: 15—3' x 15' National Tank Company sand hogs—cheap. I. T. I. O., Bartlesville, Oklahoma.

FOR SALE: 6 class C-10 Sullivan pump heads with 15' stroke used in Oklahoma City operations. I. T. I. O., Bartlesville, Oklahoma.

FOR SALE: A large stock of 7" OD McEvoy hand operated blowout preventers. I. T. I. O. Company, Bartlesville, Oklahoma.

1—60 H.P. Bessemer type 8 direct connected GAS ENGINE COMPRESSOR—150 Davis & Fisher Vacuum and pressure regulators. Reconditioned power cylinders for type 8 Bessemers. Compressor cylinders for Cooper & Bessemer engine. 1—Refinery refractionating tower, 2,500 bbls. capacity. C. J. SMITH, 532 Beacon Building, Tulsa, Oklahoma.

FOR SALE: Several used reconditioned Hughes plunger lift units complete for use with 7" casing and 2⅜" OD or 2⅞" OD tubing. I. T. I. O., Bartlesville, Oklahoma.

FOR SALE: 25,000' of new 2⅞" OD 10 thread 5.73-lb external upset Pittsburgh seamless steel tubing reamed for Hughes plunger lift. Located at our Oklahoma City warehouse. I. T. I. O., Bartlesville, Oklahoma.

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine-Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air compressor, Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.
Terms to suit.
CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St. Cincinnati, Ohio

THE PIERCE SELF-SEALING PIPE COUPLER
No Belts Less Labor Long Life
WRITE FOR DESCRIPTIVE FOLDER
State Representative
Otto Williams
P. O. Box 2033 Shawnee, Okla.

Equipment Wanted

WANTED: 800 ft. 8¼", 3,000 ft. 6-6⅝", 17-lb or heavier. 500 ft. 5-⅝", 13-lb casing; 3,000 ft. 2-2½" heavy pipe or tubing. Cash price loaded or f.o.b., Baker, Montana. Will buy several cars. 637 Plymouth Building, Minneapolis, Minnesota.

WANT TO BUY a 5 x 10 used Denver-Gardner mud pump. WANT TO SELL 1,000 feet of good used "N" Rod, $1.00 per foot.
C. E. KING
Box 341 Hutchinson, Kansas.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

For Sale—Equipment

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From 5,000 barrel to 80,000 barrel inclusive. Wood roof tanks preferred.

Write your description and number of tanks you have to offer and where located. We will make you cash offer.

SONKEN-GALAMBA CORPORATION
64 North Second St. Kansas City, Kansas

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GRADUATE CHEMIST, single, 21, 1 yr. experience in refinery laboratory, seeks better position in Mid-Continent Region or abroad. Excellent scholastic record. References. Address Box H-683, The Oil and Gas Journal, Tulsa, Okla.

PIPEFITTER, 12 years exp., High Pressure Steam and Power House Construction. Desires connection refinery or pipeline. Address Box H-711, The Oil and Gas Journal, 415 Lexington Ave., New York City.

REFINERY SUPERINTENDENT with successful record of twelve years in charge of refineries. Thoroughly experienced in the operation, maintenance, construction and design of all modern refining operations. Especially familiar with cracking operations and the production of asphalt and road oils. Technically trained and capable of forming complete organization. Address Box H-720, The Oil and Gas Journal, Tulsa, Oklahoma.

PETROLEUM Engineer, University graduate, twelve years' experience in land, geological and engineering departments, desires connection with a reliable company. Can furnish best of references. Address Box H-730 The Oil and Gas Journal, Tulsa, Okla.

REFINERY SUPT. AND CHEM. ENGR. now employed in Calif. desires work elsewhere. 10 yrs. out of college. Supt. comb. skimming and cracking plant and previously vacuum lube plant in south. Also designed and constructed two modern units. Wire or write N. Genear, c/o The Oil and Gas Journal, 1406 So. Grand Ave., Los Angeles, California.

Addresses Wanted

WANTED: Address of Irvin L. Hastings formerly El Dorado, Arkansas. C. A. Lucas, Blessing, Texas.

Help Wanted

SITUATION OPEN. Large Midcontinent Refinery wants graduate chemical or mechanical engineer to take charge of new department of lube oil testing. Must be fully acquainted with engine and dynamometer operations and all methods of service testing of lube oils. In reply describe fully education, business and personal history, enclose small photo, and state salary expected. Location Kansas City. Address Box H-732. The Oil and Gas Journal, Tulsa, Oklahoma.

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CAPITAL secured for new and going companies. Moderate charges. Delaware charters. J. Murrow 299 Broadway, New York.

Mailing Lists

ROYALTY INVESTORS from pipe line records. Other oil country lists. Oil Industry Mailing List Co., 909 Tulsa Loan Building, Tulsa, Oklahoma.

Ranches and Farm Lands

1532 ACRES in one tract, good ranch proposition, prospective oil value, $4 per acre net; 2470 acres cut over timber land $1.75 per acre; 360 acres $2 per acre, good title abstract supplied. Luther Calahan, Idabel, Oklahoma.

Leases—Production

BROKERS—Why buy oil leases when you can buy 40 acres land in fee including all oil, gas and other minerals CHEAP, Brewster County, Texas. Warranty title. Write A. C. SMITH, P. O. Box 200, San Antonio, Texas.

Specializing leases twenty acres up dollar acre, East Tex., La., S. Ark. Owners—Attorney. Box 1122, Little Rock, Ark.

A GOOD HABIT

The Classified Section of The Oil and Gas Journal is a most excellent medium of exchange for every commodity and service pertaining to the petroleum industry.

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CONSULT THE CLASSIFIED ADS

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma

Leases—Production

WELL selected leases and royalties in Cass County, Texas, and Miller County, Arkansas. W. B. Worthen, Atlanta, Texas.

OIL Leases, Royalties, Real Estate, Drilling propositions in Proven, Semi Proven and Wildcat areas. W. T. Brown, Denton, Texas.

JACK County, Bryson area, Texas, oil and gas leases between deep tests, $3.50 to $5 per acre, also two blocks 2000 acres each. P. O. Box 1454, Wichita Falls, Texas.

WANTED, SHALLOW OIL
drilling blocks Eastern Kansas for development. Must be reasonable and have good geology. Write fully.
Box 2480
Kansas City, Missouri

OWNER WISHES to lease all or any part of Sections 7, 12, and the E. ½ of Section 14, in Block C-43, Gaines County, Texas, at $2.00 per acre. Address
Box H-712
The Oil and Gas Journal, Tulsa, Oklahoma.

No Proration; Arkansas, New Field, Two Producing Sands, Oil and Gas Leases, Perpetual Mineral Royalty $5. per acre for lease and half royalty within 15 miles of production, Nevada County. H. E. Bemis, 10 McRae Building, Prescott, Arkansas.

NEW MEXICO—My weekly scout report furnishes complete and reliable information on New Mexico developments. Send for copy. W. S. Patterson, Santa Fe, New Mexico.

WANTED: Stripper oil production or wells or leases that are ready for salvage. Address Box H-724, The Oil and Gas Journal, Tulsa, Oklahoma.

FOR SALE—800 acres in Allen County, Kansas. 20 feet Bartlesville sand on shoestring, 1½ miles long, 1 to 3 locations wide, 9 oil, and 2 gas wells, plenty good water, ideal for pressure drive. Address Box H-722, The Oil and Gas Journal, Tulsa, Oklahoma.

CORPORATION WANTS deals looking toward shallow production. We maintain our own geological and drilling department. Send particulars to
Post Office Box 1167
Tyler, Texas.

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Does not have any production (proration) restrictions. The opportunity for quick "payouts" is obvious. Investigate Royalty and leases opportunities here.
WILLIAM MONROE LAYTON
P. O. Box 411, Texarkana, Ark.
P. O. Box 949. Hot Springs, Ark.

LANDS Leases, Royalties, anywhere, bought, sold. Lands, $2 acre up. Leases 25c acre, up. Advise needs. American Investment Co., Houston, Texas.

LEASES and lands in New Nevada County, Arkansas field. $3 to $15 near production; looks good. Write Southern, 2714 State St., Little Rock, Arkansas.

WANTED—Opportunity to drill off-set lease for an interest or will buy close-in lease. Room 724, 39 South LaSalle, Chicago, Illinois.

NEW MEXICO, Chaves County, 1000 acre solid lease block. 9 years, 5c rentals, price 30c per acre. Roy G. Barton, Box 191, Clovis, New Mexico.

FOR SALE
Ten acre lease, one well, derrick, tools, pumping equipment, all connected with pipe lines. Be-Bee Oilfield, Pontotoc County, Oklahoma.
Sale by court order April 17, 2:00 o'clock P.M., see Thomas P. Holt, Receiver, Box 357, Ada, Oklahoma.

WILDCAT LEASES
In drilling block Live Oak County, Texas, well to go 3,000 feet testing 6 known producing sands; leases $10.00 to $35.00 per acre. 280 acres Starr County in trend $5.00 acre. 120 acres Hidalgo County near major company block $7.50 acre. FOMAX OIL CORP., P. O. Box 290, Corpus Christi, Tex.

FOR SALE—87 acre lease with five wells pumping, shallow production in eastern Kansas. A. B. Frederick, Lawrence, Kans.

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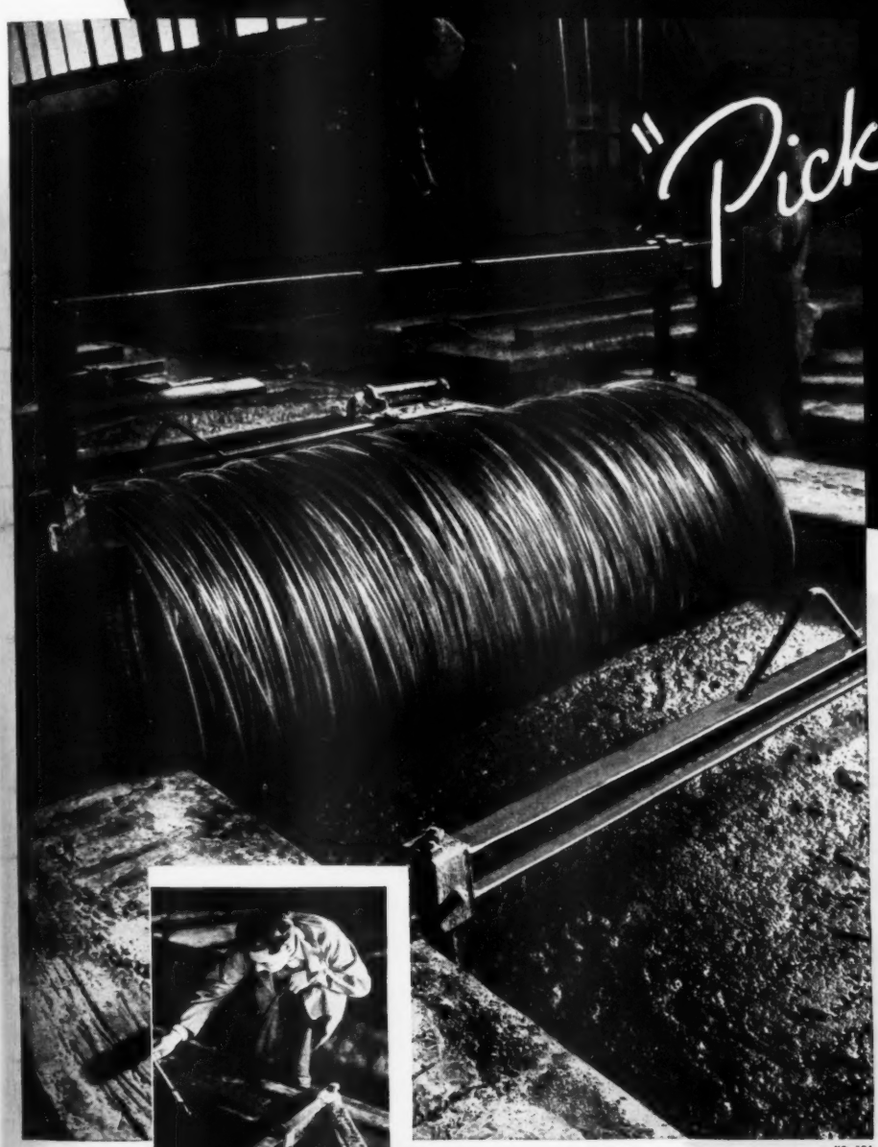

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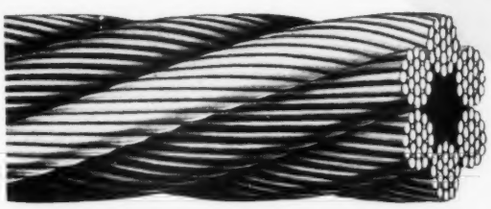

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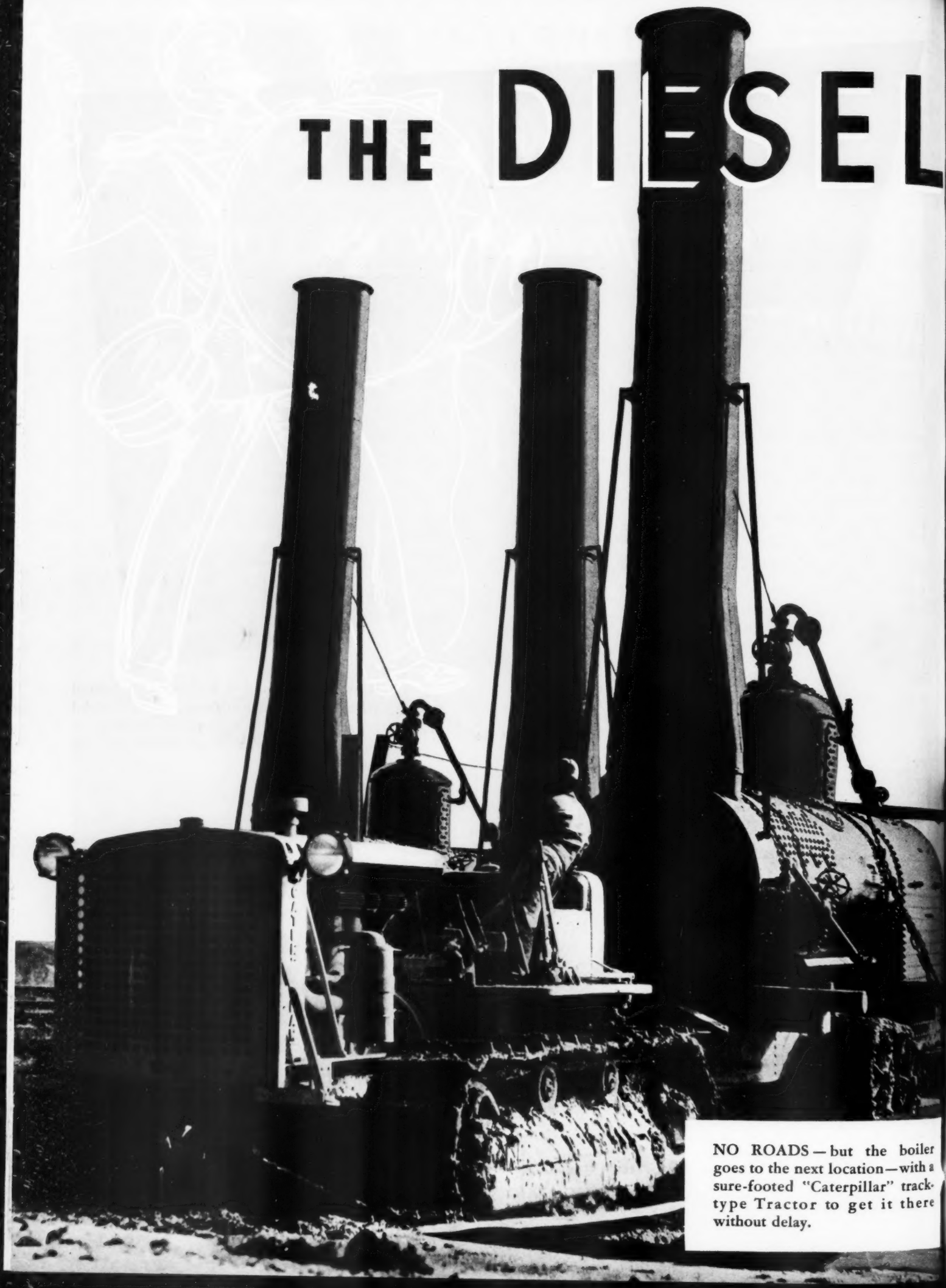

NO ROADS — but the boiler goes to the next location — with a sure-footed "Caterpillar" track-type Tractor to get it there without delay.

IS A "one man band" AROUND THE OIL-FIELDS

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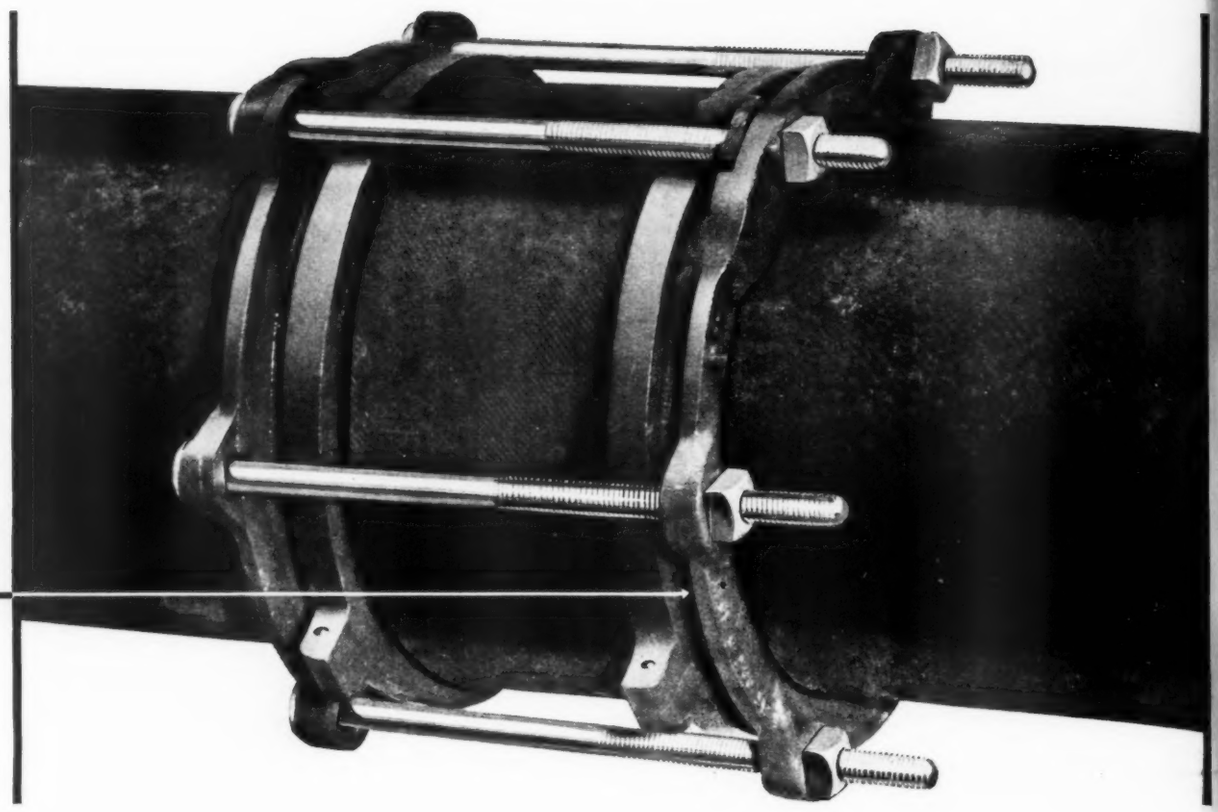

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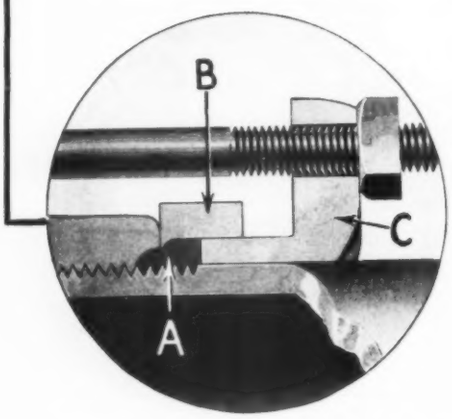

Cross section shows how gasket (A) is forced directly into the source of the leak by thrust from Main Ring (C) and guided into the threads by Gasket Container Ring (B) with its exclusive Skinner Lip.

THE SKINNER COLLAR LEAK CLAMP satisfies the demand for a clamp that will stop any type of collar leak—in oil or gas lines, regardless of the kind of collar used (recessed or merchant) or condition of line.

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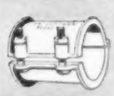
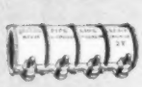
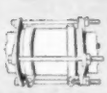

EMERGENCY PIPE CLAMP


PIPE LINE CLAMP

PIPE JOINT CLAMP


COLLAR LEAK CLAMP

HIGH PRESSURE WELD CLAMP

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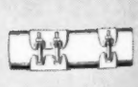
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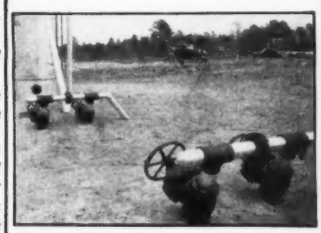

HOUSTON, TEX., Mar. 26—Whether your problem is sour crude, abrasive sand, or bottom hole pressures, any other of the thousand and one troubles of the oil industry, Crane has a valve that will solve it.

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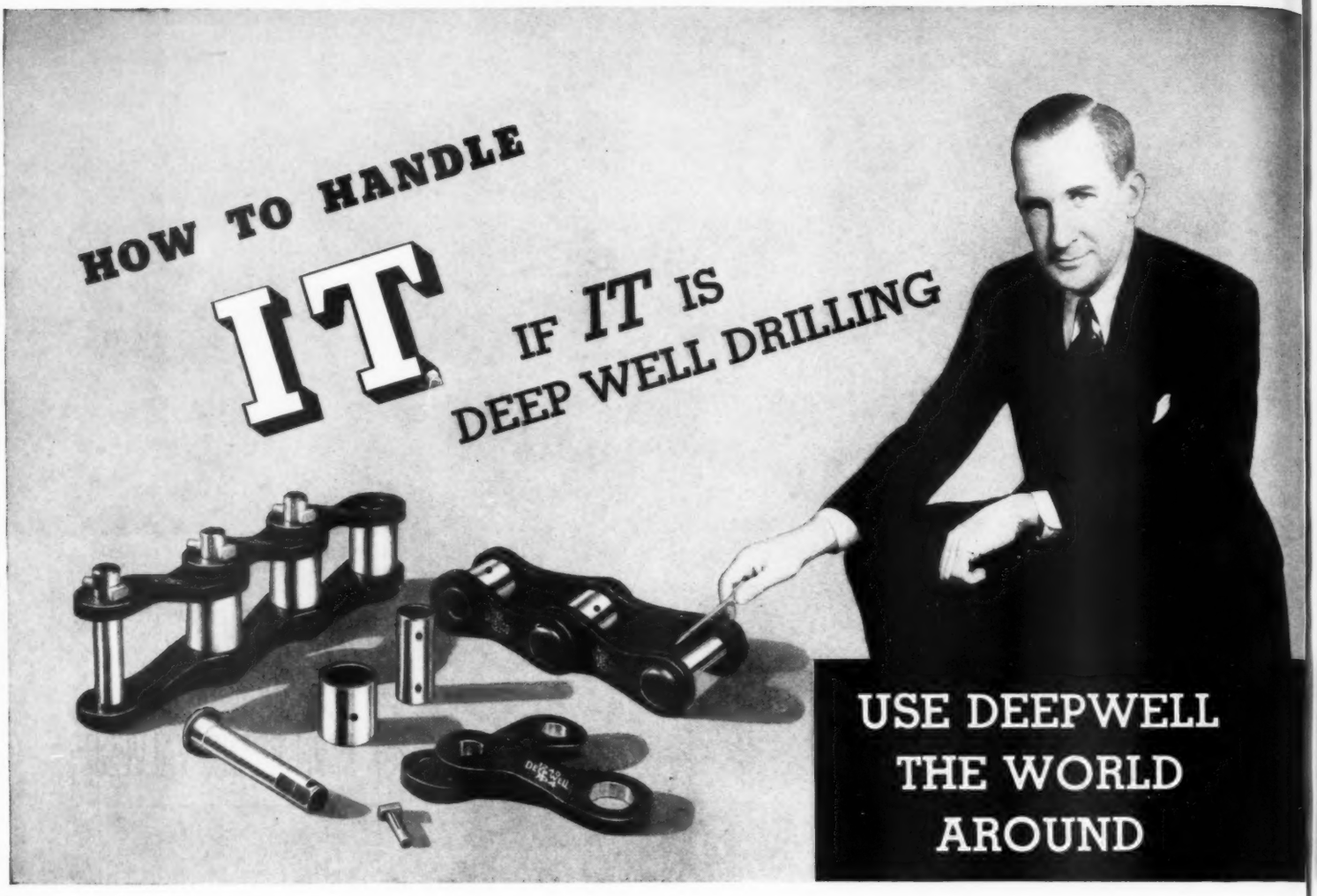

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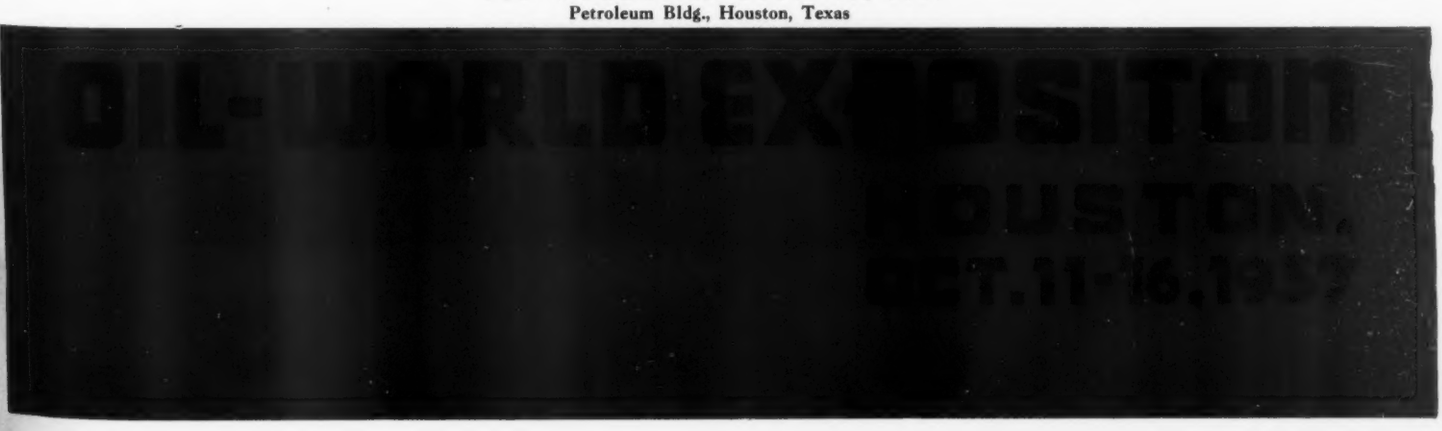

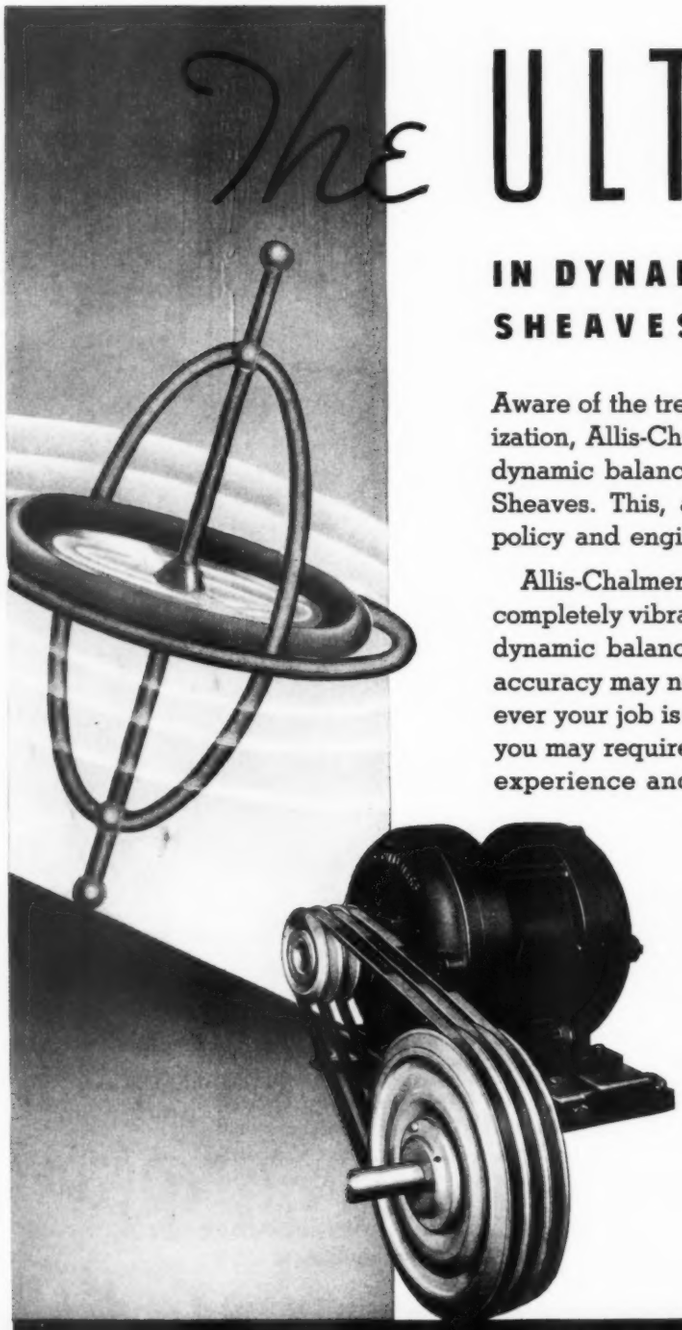

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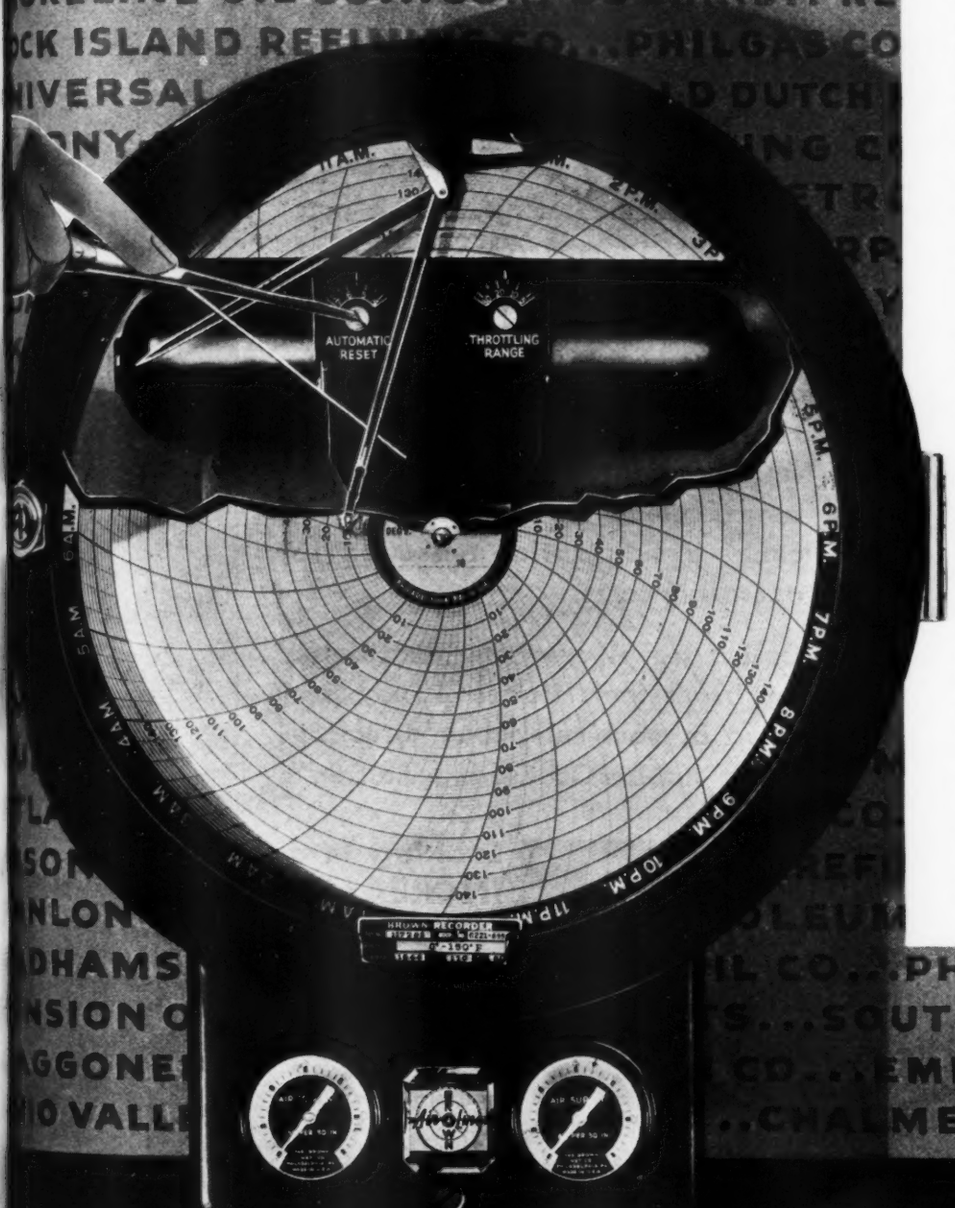

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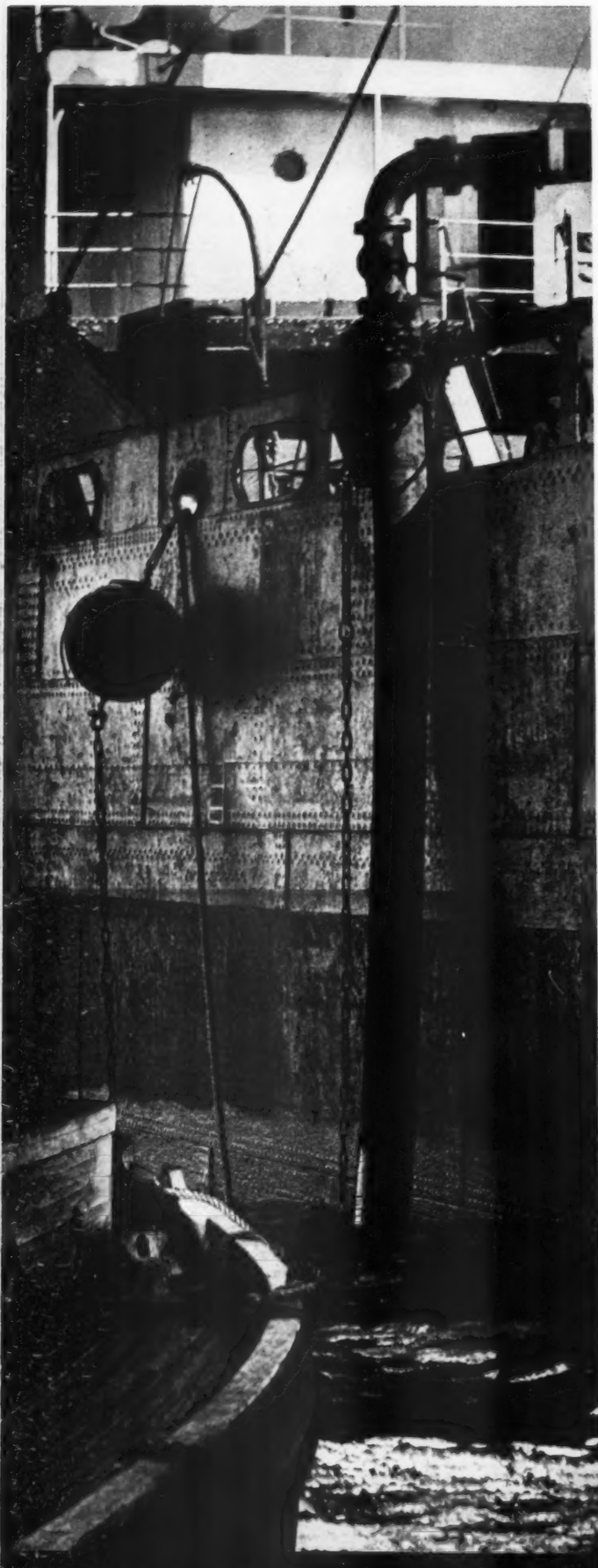

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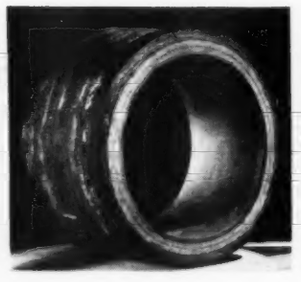

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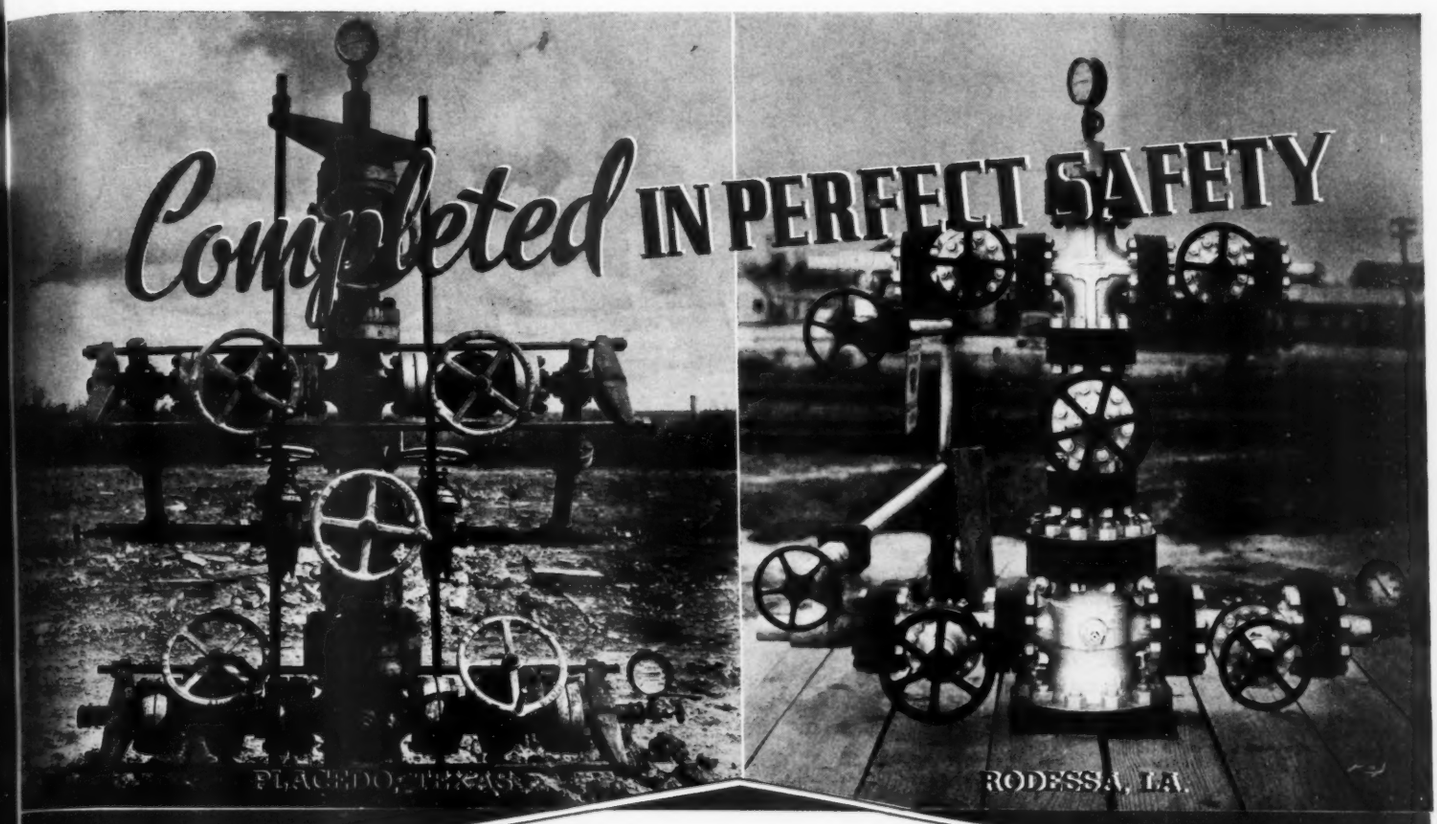
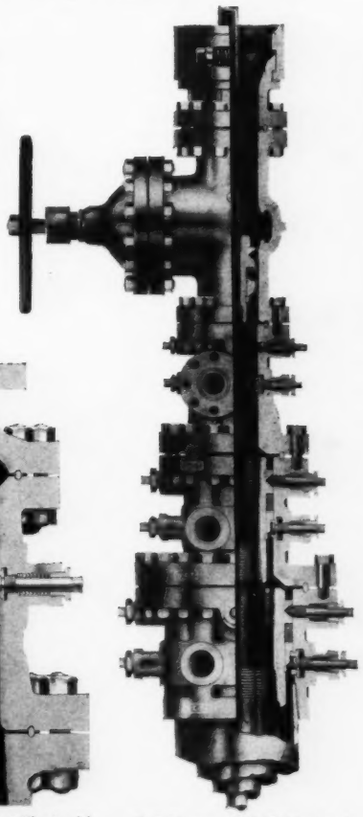


THROUGH O-C-T TYPE "Q" TUBING HEADS

Completing high pressure wells through O-C-T type "Q" Tubing Heads is "standard practice" in most high pressure fields today. Designed for use with blowout preventer equipment for drilling in, running and landing tubing, the inside diameter of this Tubing Head is the same as that of the pipe on which it is used. Retractable hanger seats permit the use of full size bits and packers. Patented lock-down screws force the hanger into sealing position against 6000 pounds pressure and permit the removal of blowout preventer equipment in perfect safety. The tubing hanger passes through the blowout preventer and master gate valve, which have the same inside diameter as the pipe, and lands on the retractable seats, which will safely support 200,000 pounds. Tubing hanger may be lowered any depth below its seating position by simply backing out the retractable seats. After the well has been brought in, the tubing can be raised or lowered against pressure by inserting a plug in the tubing string and re-installing blowout preventer equipment. The accompanying sectional drawings clearly illustrate the advantages of O-C-T type "Q" Tubing Head.



"Selling Through Supply Stores."

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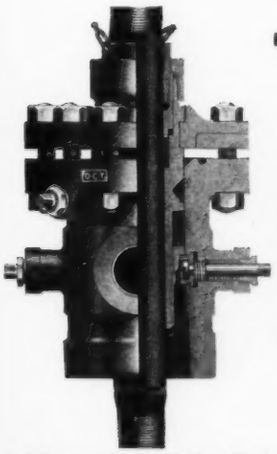
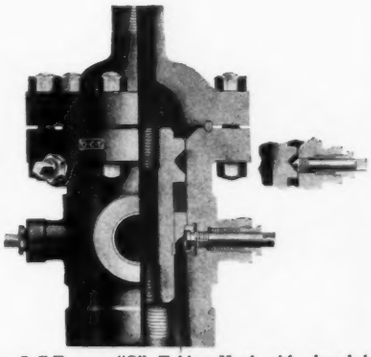
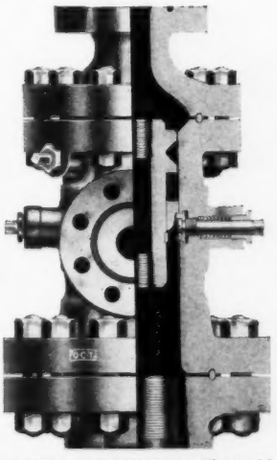
Write for Complete O-C-T Catalog.



O-C-T type "Q-5" Tubing Head, having same body design as type "Q" but providing slips for suspension of tubing string.



O-C-T type "Q" Tubing Head with threaded connections for casing and Christmas-tree.



O-C-T type "Q-6" Tubing Head with flanged Christmas-tree and Casing Head connections, designed to fit O-C-T types "QB", "QC", "C-3," or "C-3-F" Casing Heads.

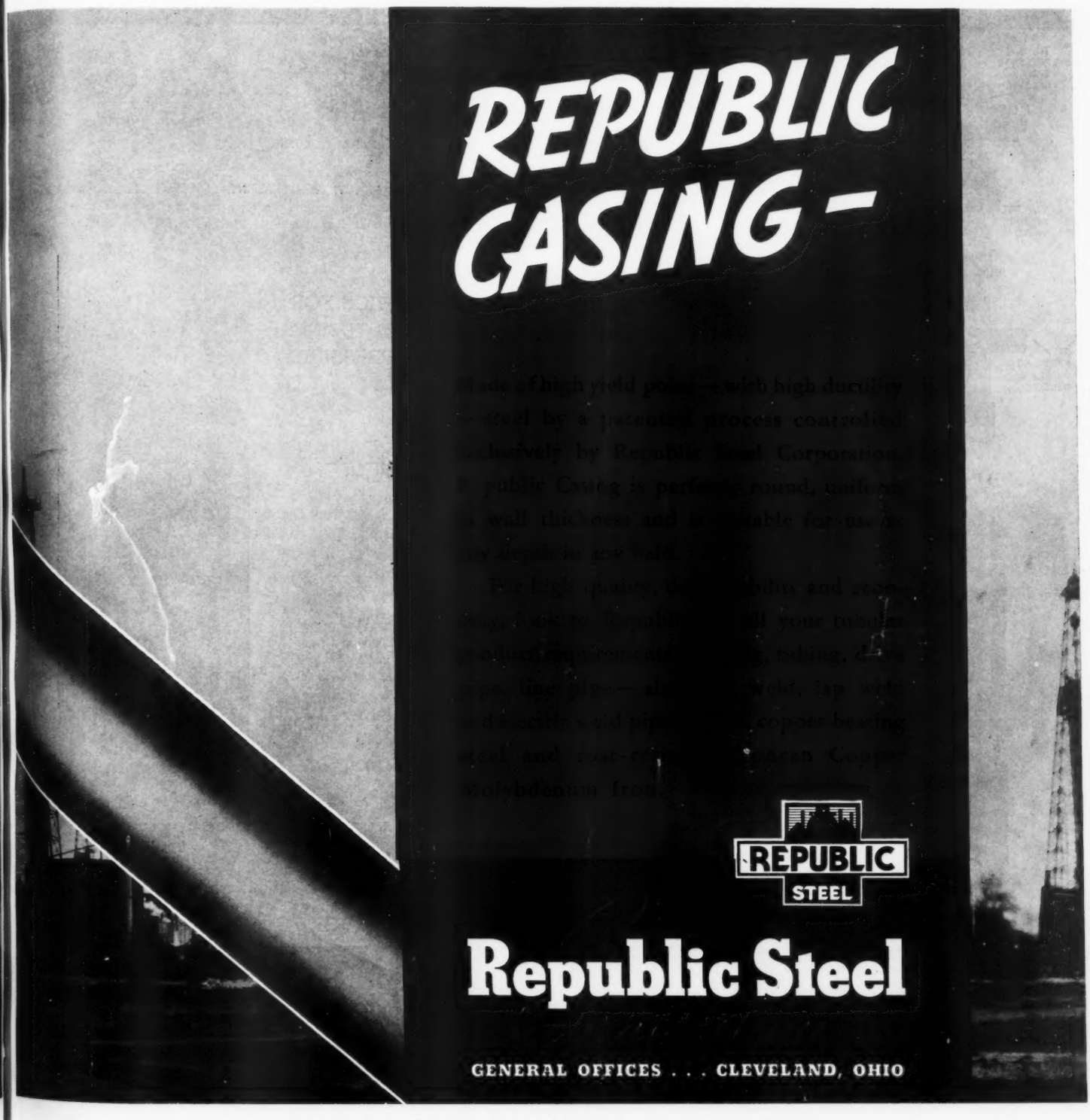
O-C-T type "Q" Tubing and Casing Head hook-up, showing tubing hanger passing through master gate valve.

U. S. Patent No. 2016454-2046579

THERE'S

PROFIT AHEAD

for the producer who uses



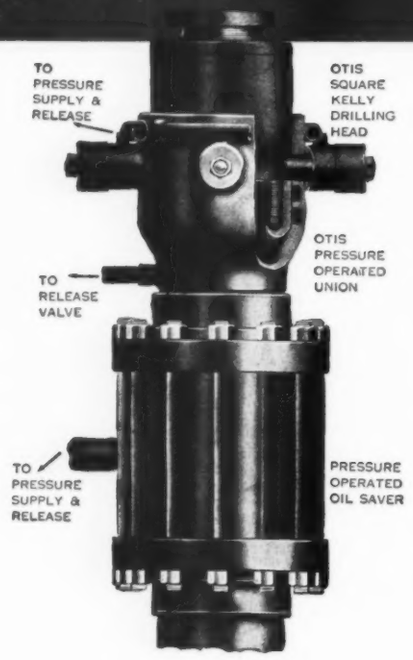
SPECIALIZING

IN EQUIPMENT & SERVICE

applying to well operations

UNDER PRESSURE CONTROL

OTIS


TO PRESSURE SUPPLY & RELEASE
OTIS SQUARE KELLY DRILLING HEAD
OTIS PRESSURE OPERATED UNION
TO RELEASE VALVE
TO PRESSURE SUPPLY & RELEASE
PRESSURE OPERATED OIL SAVER

OTIS SQUARE KELLY DRILLING HEAD AND PRESSURE OPERATED UNION

FOR DRILLING IN UNDER PRESSURE CONTROL.

FOR USE AS A SQUARE KELLY BLOWOUT PREVENTER.

FOR CARRYING ADDITIONAL PUMP PRESSURE ON THE MUD COLUMN.

Otis Pressure Drilling equipment and service has been successfully used in the completion of approximately 1500 wells in this country and abroad. SAFE, PRACTICAL, EFFICIENT. Adapted for use in both high and low pressure fields. Minimizes hazards to men and property and at the same time reduces your drilling-in costs. No "mudding off" of producing sands. Otis Equipment and Service is a by-word in the oil industry.

OTIS EQUIPMENT AND SERVICE FOR RUNNING AND PULLING OF TUBING AND DRILL STEM UNDER PRESSURE

The handling of pipe under extremely high surface working pressures and the landing of packers under pressure at depths as great as 9000 feet has been successfully accomplished by Otis highly trained crews, using Otis patented methods and equipment. Pictured is an Otis crew running 7300 feet of 2½" tubing against 2200 lbs. well pressure. YOU CAN'T GO WRONG WITH OTIS SERVICE.

OTIS REMOVABLE BOTTOM HOLE CHOKES AND OTIS MIXING VALVES

The Otis Removable Bottom Hole Choke needs no introduction to production men. It can be used to steady and prolong the flowing life of wells. Eliminates freezing at surface controls, thereby doing away with the necessity of installing costly heating systems, in many instances, to reduce gas/oil ratios, and to reduce emulsifying. As the name implies, it is removable. Can be set or pulled under pressure on a wire line at any depth, all without disturbing the tubing string.

The Otis Mixing Valve, in conjunction with the Otis Removable Bottom Hole Choke, permits the ready variation of withdrawal from the well. It does this by taking production from the casing head, the hot gas from the tubing preventing freezing.

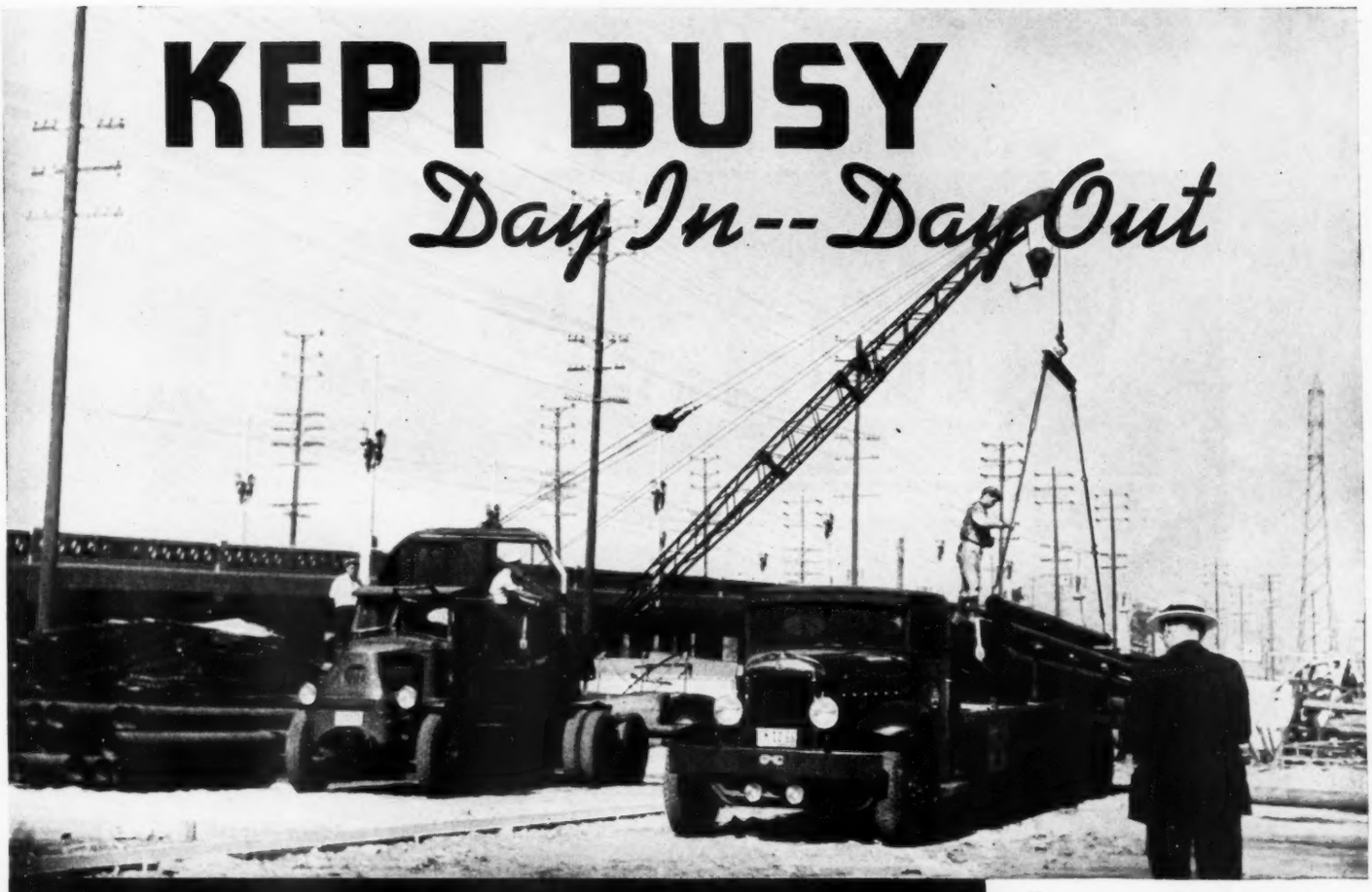
LITERATURE AVAILABLE ON THESE AND ALL OTHER OTIS PRODUCTS

PRESSURE CONTROL OTIS SERVICE — EQUIPMENT TRADE MARK

DALLAS, TEXAS

HOUSTON — SHREVEPORT — OKLAHOMA CITY — ADA — PO...

KEPT BUSY
Day In--Day Out

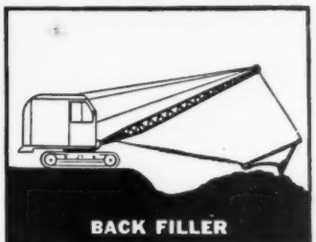


P&H BANTAM WEIGHT
FOR OIL FIELD AND PIPE LINE JOBS

It's built for speed, this little husky, with so many different uses that it's constantly on the go — finishing one job and starting another with mighty little time lost between them. From loading pipe it goes to laying pipe — to digging basements and slush pits — to pile driving or back filling. Once in the oil fields, the Bantam Weight doesn't get a rest — and doesn't need it!

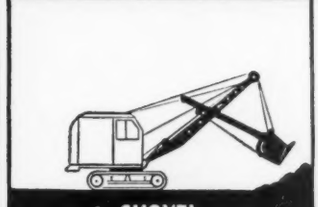
It's fully convertible . . . shovel, crane, dragline, pile driver, back filler or trench hoe attachments are made of alloy steels — so simply set up that it's practical to change from one service to another right in the field. The Ford V-8 motor gives it all the power you'll ever need at the lowest operating and maintenance cost ever known in a unit of this kind. Mounted on a truck chassis or on its own tractor-type crawlers, the Bantam Weight's a high speed machine with high earning ability. Write for full information.

CONVERTIBLE FOR ALL TYPES OF SERVICE

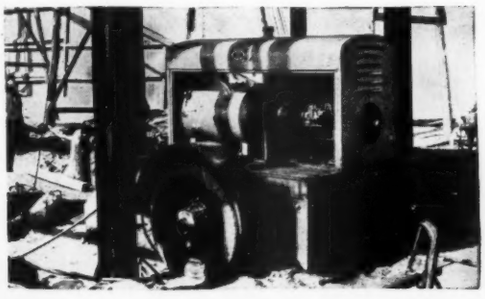


BACK FILLER

TRUCK CRANE



SHOVEL



"SMOOTHARC" P&H HANSEN WELDERS FOR MAINTENANCE WORK

Makes arc welding much simpler. One easy adjustment gives you current control over the entire welding range with a steady arc for better welding results. 150-amperes gives you the capacity for a wide range of work. It's powered by a small, air-cooled, direct-connected gas engine, remarkably efficient. It's mounted on a two-wheel automotive-type trailer with cantilever springs and balloon tires; amply protected against road shocks. Write Harnischfeger Corporation. 4527 W. National Ave., Milwaukee, Wisconsin

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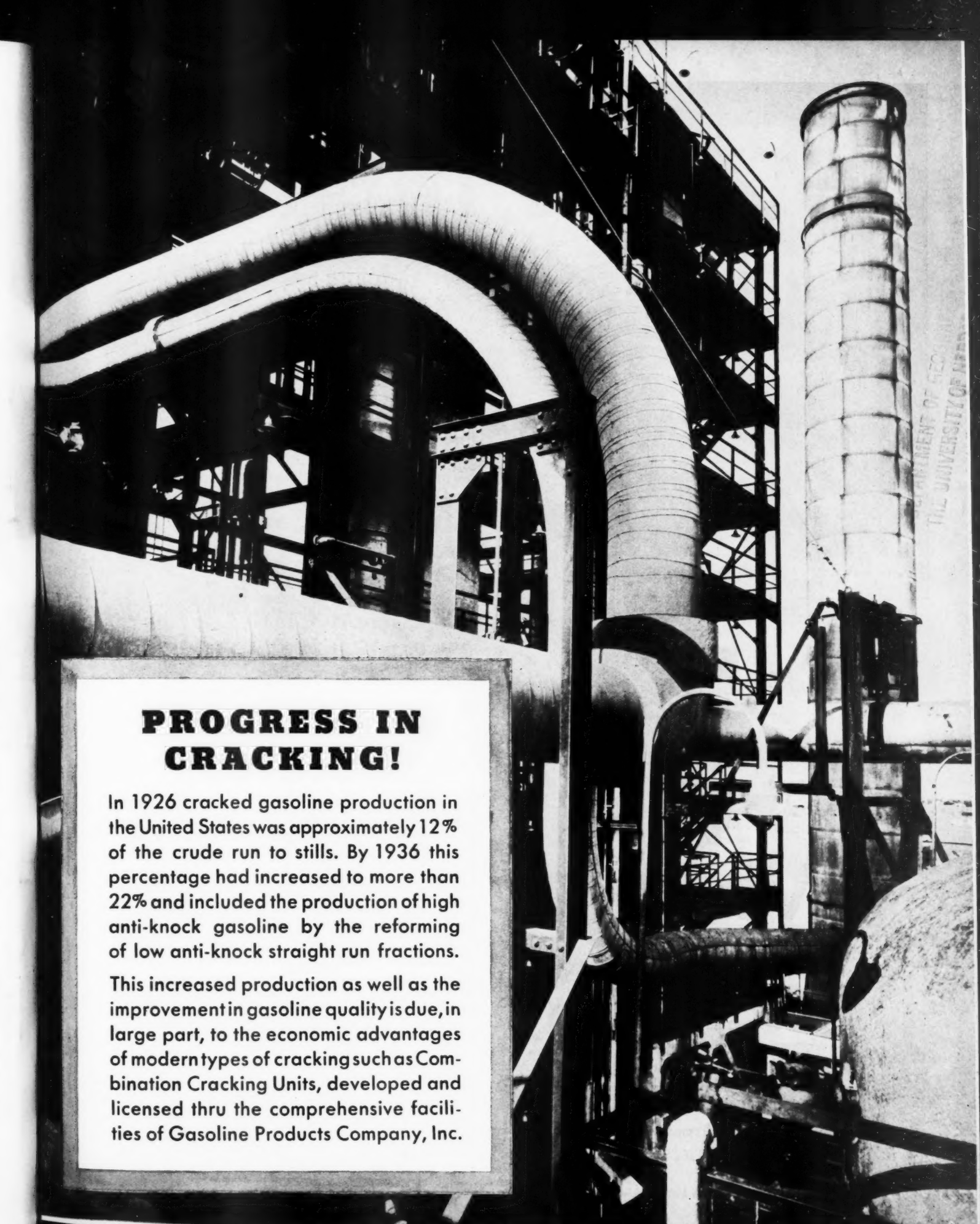

PROGRESS IN CRACKING!

In 1926 cracked gasoline production in the United States was approximately 12% of the crude run to stills. By 1936 this percentage had increased to more than 22% and included the production of high anti-knock gasoline by the reforming of low anti-knock straight run fractions.

This increased production as well as the improvement in gasoline quality is due, in large part, to the economic advantages of modern types of cracking such as Combination Cracking Units, developed and licensed thru the comprehensive facilities of Gasoline Products Company, Inc.

ENSES granted under United States and Foreign Patents for: Cross, de Florez, Holmes-Manley, Tube and Tank Cracking Processes, Uni-Coil Injection Process and Combination Cracking Units
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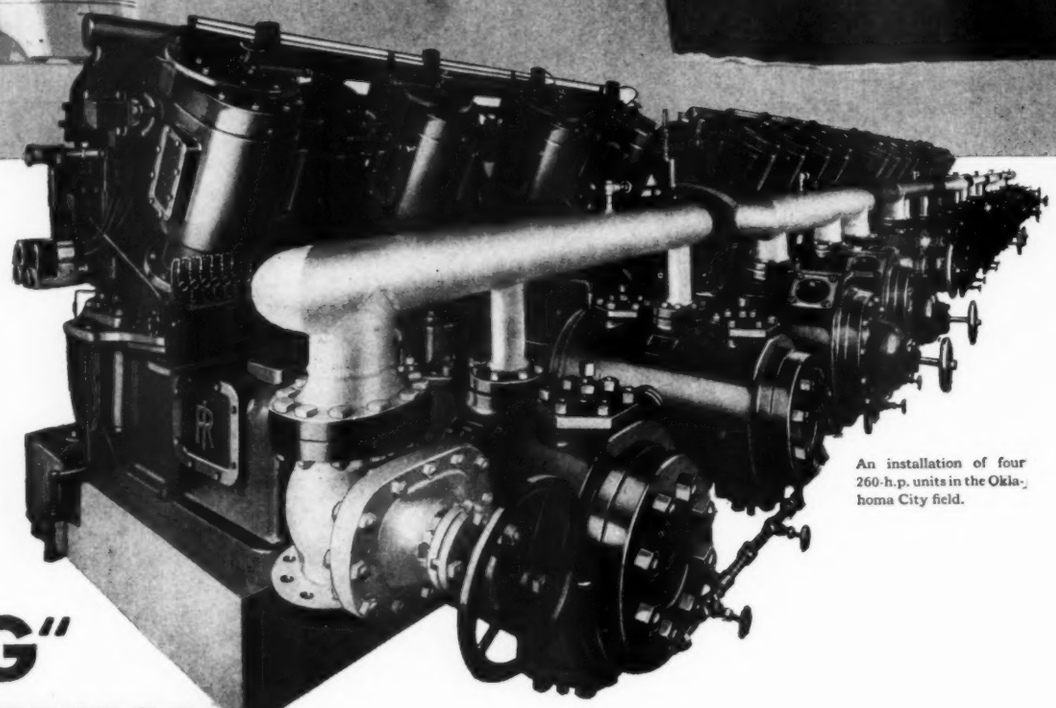
GASOLINE PRODUCTS COMPANY
INCORPORATED

SETTING THE PACE



An installation of four 260-h.p. units in the Oklahoma City field.

"XVG" COMPRESSORS

In the van of the forward march of industry there are always a few recognized leaders—outstanding because they have had the fortitude to disregard old conventions and traditions, and pioneer a new construction that they know to be progress.

Their lead is later followed, after others have had the time and the opportunity to observe the soundness of the new design.

Ingersoll-Rand's "XVG" is the proven and recognized leader in modern gas-engine-driven compressors—proven by its wide acceptance in oil field service—not only in the United States, but throughout the World.

("XVG"'s are in service today in the oil fields of 12 countries)

OUTSTANDING FEATURES

Four sizes available with two, four, six and eight power cylinders. Over 90% of parts interchangeable on all sizes.

Units inherently balanced, requiring small and inexpensive foundations.

Shipped completely assembled from shops.

Readily installed without help of a factory erector.

Easy to operate and maintain.

Read Catalog 3065

433-I

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ON GUARD
Against Corrosive Action...

TRADE MARK REGISTERED

COP-NIC tanks were developed by and are produced exclusively by Columbian Steel Tank Company, the largest fabricator in the world of bolted steel tanks for the oil industry. It is a new forward step in oil storage that every oil man should know about.

COLUMBIAN COP-NIC GALVANIZED BOLTED STEEL TANKS

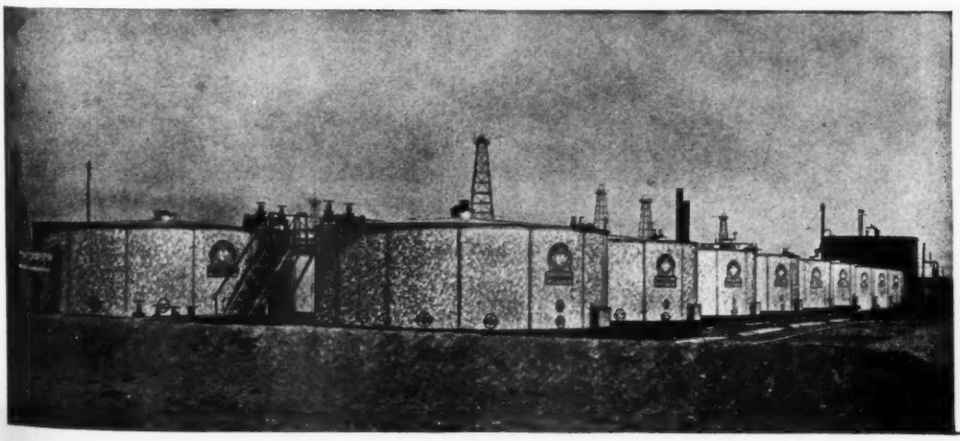
Built Especially for Storing Sour Crude—Last Longer in Ordinary Service

With Columbian COP-NIC Galvanized Bolted Steel Tanks you are constantly on guard against corrosive action and can be sure of perfect storage for sour crude.

COP-NIC steel with a special galvanized coating makes Columbian Bolted Tanks highly resistant to corrosive action and perfect for use in sour crude districts. The sheets from which these tanks are made are of selected base material. An exclusive galvanizing process is used to put on a heavy coating of zinc spelter which is applied in such a manner as to become virtually a part of the steel itself, minimizing the possibility of any pitting or loosening of the coating.

The unusual results obtained with these COP-NIC Galvanized Tanks are attributed to the process used in preparation of the sheets, of the coating, and the manner of fabrication which does not destroy or render ineffective the galvanized coating.

Safeguard your tank investment by letting Columbian COP-NIC Tanks stand guard against corrosive action. Mail the coupon now for full facts.



(Left) Battery of Columbian Cop-Nic Galvanized Bolted Steel Tanks in a sour crude field.

See pages 478, 479, 480, 481, in the Composite Catalog.

COLUMBIAN STEEL TANK CO., Dept. OJ, Kansas City, Mo., U. S. A.

Please send information on the following:

☐ COP-NIC Tanks ☐ Regular Bolted Steel Tanks ☐ Send me my free copy of the new Columbian Tank Catalog.

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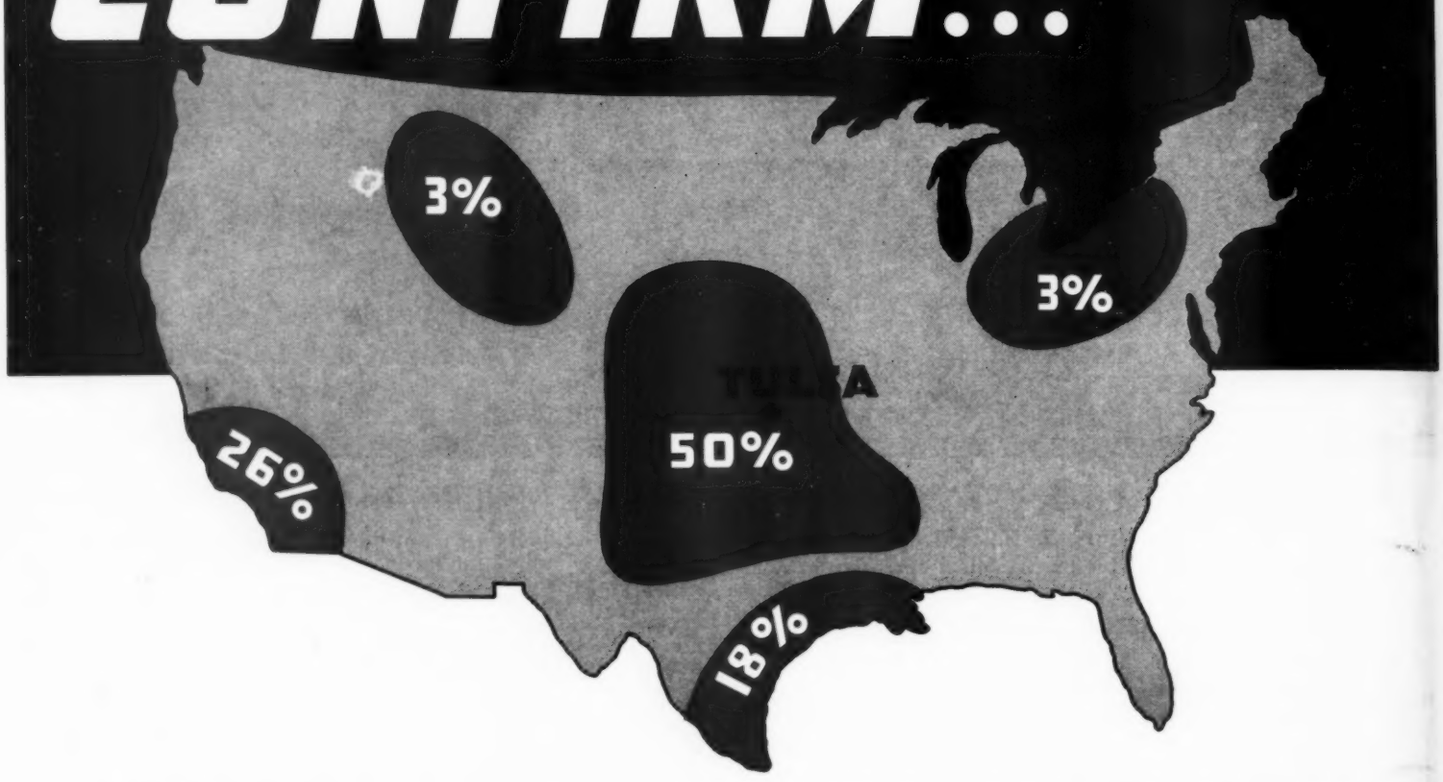
1937 KNOWN OIL RESERVES CONFIRM...



—TULSA'S position as "World Oil Capital"

There could be no stronger confirmation of the security of Tulsa's position as the World's Oil Capital than the figures on known oil reserves as of January 1st, 1937, recently published by The Oil and Gas Journal.

The Mid-Continent has 6,282,000,000 barrels of known oil reserves, which is slightly more than 50% of the nation's known oil reserves.

Tulsa's position is central, in the Mid-Continent area.

Note, also, Tulsa's central position with regard to *all* U. S. oil territory.

This central position explains why Tulsa has become and will continue headquarters city for more than 400 oil companies operating not only in the Mid-Continent but throughout the nation.

It also explains Tulsa's great popularity as a central meeting place for national organizations of oil men.

It explains the dominant position of the International Petroleum Exposition, held at Tulsa every two years.

Concerns like Bethlehem Steel Corporation do not select headquarter cities without thorough investigation. Bethlehem has selected Tulsa as its headquarters city from which to distribute oil industry supplies and equipment to the Mid-Continent and Gulf Coast.

The Tulsa Chamber of Commerce will gladly prepare special reports for firms considering Tulsa as a branch office, warehouse, or manufacturing point. There is no obligation. Write today.

1938 INTERNATIONAL PETROLEUM EXPOSITION TULSA MAY 14-21

TULSA

Oil Capital of the World

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(ADDITION OF VITAMIN D)
makes good
Bread and Milk
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the Preforming Process
makes good Wire Rope *BETTER*

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Preforming gives wire rope the life-giving value of relaxation. A basic improvement to a century-old product.

Preforming relaxes wire rope. It puts all component wires and strands in a state of ease. They are comfortable, unstrained, flexible. Preforming thereby tends to eliminate the destructive internal torsional stress; tends to reduce crankiness and kinkiness.

Preforming makes wire rope easier to handle; easier and faster to splice or socket. For many applications preformed wire rope lasts longer; gives better service.

Ask us to send you a sample. Learn all the facts about its true superiority. For many wire rope applications, preformed wire rope will give you much greater dollar value.

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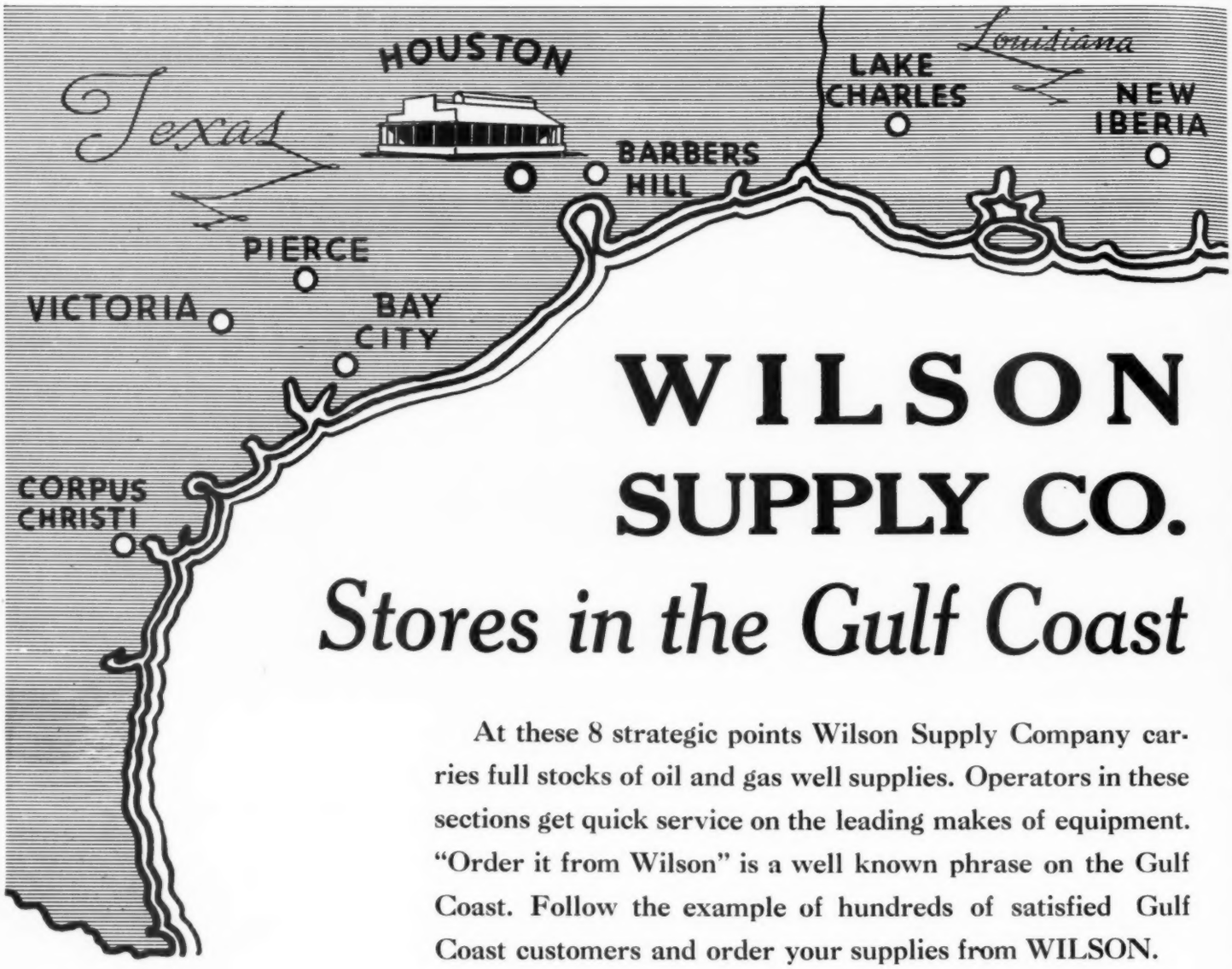
***Preformed* WIRE ROPE**
for SAFETY · ECONOMY · EFFICIENCY

For Speed and Convenience



WILSON SUPPLY CO.

Stores in the Gulf Coast

At these 8 strategic points Wilson Supply Company carries full stocks of oil and gas well supplies. Operators in these sections get quick service on the leading makes of equipment. "Order it from Wilson" is a well known phrase on the Gulf Coast. Follow the example of hundreds of satisfied Gulf Coast customers and order your supplies from WILSON.

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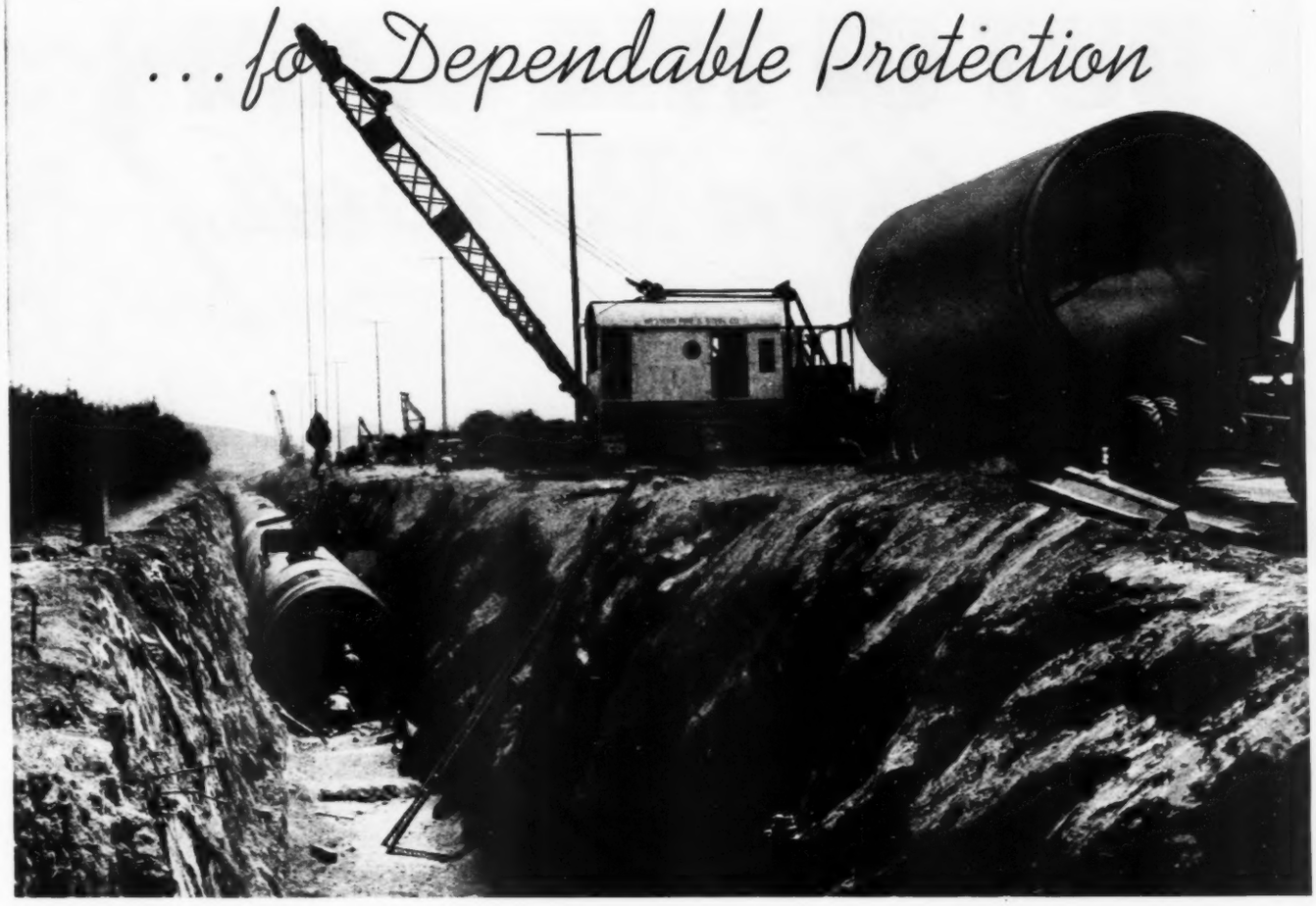
REILLY PIPE ENAMEL & PRIMER

...for Dependable Protection



WHETHER the job be protection of oil transportation lines, water storage tanks or water conduits—Reilly Coal Tar Enamel is inherently qualified to give permanent protection.

As an outside coating for steel pipe—it gives unequaled resistance against electrolysis and corrosion of soil acids and alkalis—and as an inside lining for water conduits—tanks—or service mains, prevents corrosion—tuberculation—and gives maximum flow at all times—eliminating expensive cleaning operations. Reilly Enamel is rigidly held to most exacting specifications and when properly applied cannot be stripped from steel and will not sag at temperatures approaching 200° F.—will not crack, peel or check when subjected to temperatures as low as minus 20° F. Consult Reilly for Pipe Line Protection—our service and facilities are yours to command.

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like a Pipe Still

AND THE PREMIER OIL REFINING CO. WILLOW SPRINGS, TEXAS SAVED THE EXPENSE OF A BUILDING . . . .

With or without a building, VOGT boilers will carry your load. A half century of experience is the Reason-Why.

We'll tell you more about our boilers if you are interested.

WRITE NOW!

HENRY VOGT MACHINE CO.
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LOUISVILLE KENTUCKY

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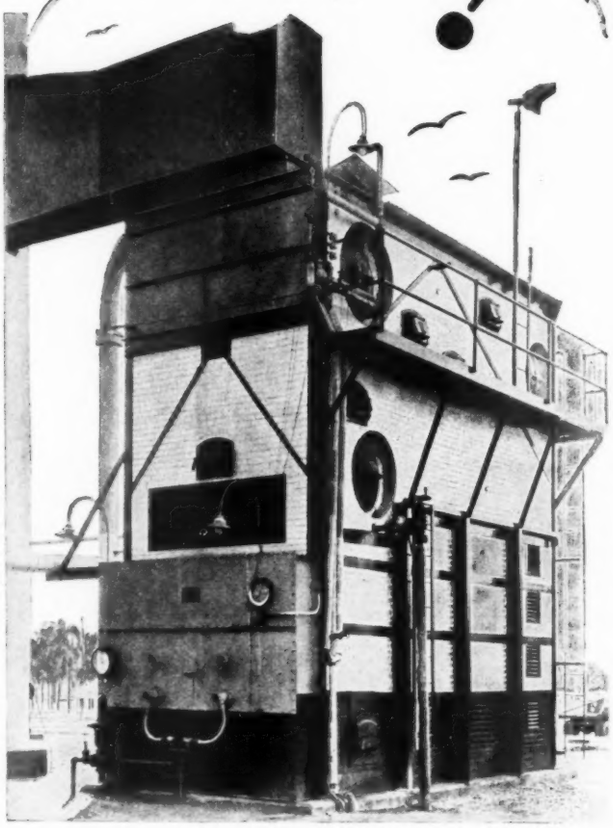


258 horse power Vogt boiler, with air cooled furnace walls, at Premier Oil Refining Co., Willow Springs, Texas

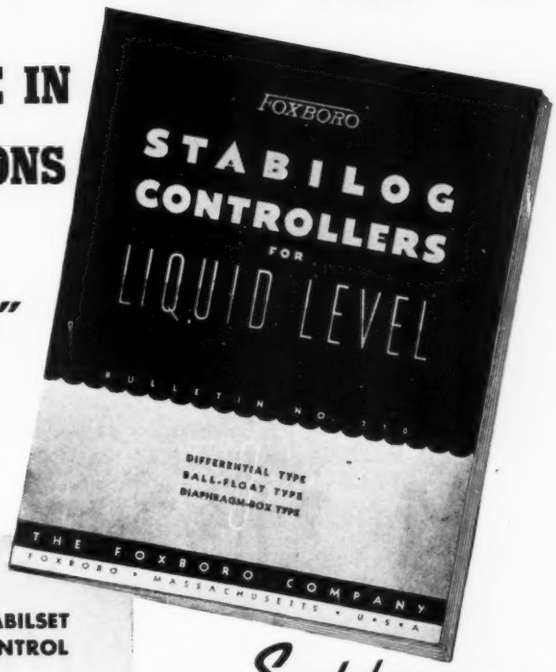
Manufacturers of: Water Tube Boilers, Drop Forged Steel Valves and Fittings, Ice Making and Refrigerating Machinery, Oil Refinery Equipment, Heat Exchangers.

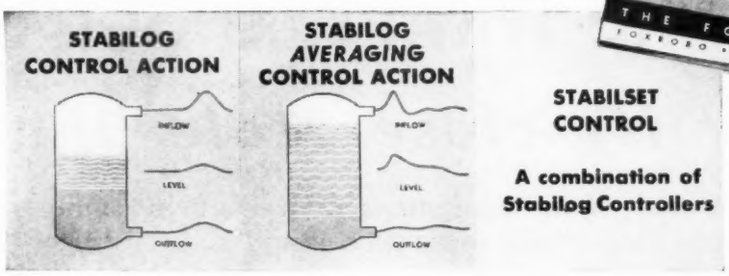
Vogt WATER TUBE BOILERS

PROVED!

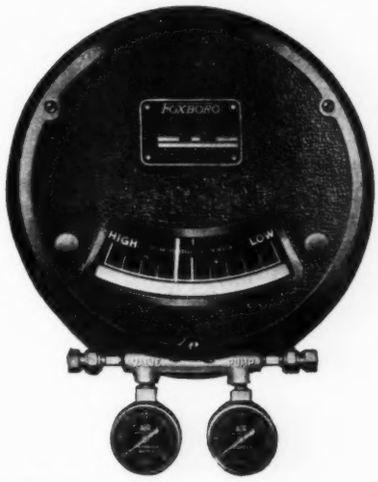
BY SIX YEARS OF SERVICE IN HUNDREDS OF INSTALLATIONS

. . . the "Complete Control" for all surge vessels





Send for this new BULLETIN 210



Ordinary level controllers prevent surge vessels from functioning as such because they merely maintain liquid level. Foxboro Stabilog Liquid Level Controllers, on the other hand, not only permit surge action in the vessel but actually force it. This absorbs the surge in the vessel and gives smooth control of outflow.

They can be arranged for several types of control action to meet specific conditions and are available in three different types of measuring systems. Bulletin 210 gives complete details. Write for a copy. The Foxboro Company, 60 Neponset Avenue, Foxboro, Mass., U. S. A. Branch offices in 25 Principal Cities.

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REG. U. S. PAT. OFF.

STABILOG LIQUID LEVEL CONTROLLERS

RESPONSE · ACCURACY

Precision MANUFACTURE

of WIRE WRAPPED SCREEN

permits closer tolerances

No branch of the equipment manufacturing industry is working to closer tolerances than manufacturers of oil well screen.

The wide variety of conditions to which screen is subjected makes this necessary. The texture of the sand, the volume of flow; the extent of gas pressure, acidic conditions and numerous other circumstances determine the kind of screen to set.

Wire wrapped screen openings can be more accurately held to closer tolerances—can more uniformly maintain openings of the proper gauge.

The LAYNE WIRE WRAPPED SCREEN

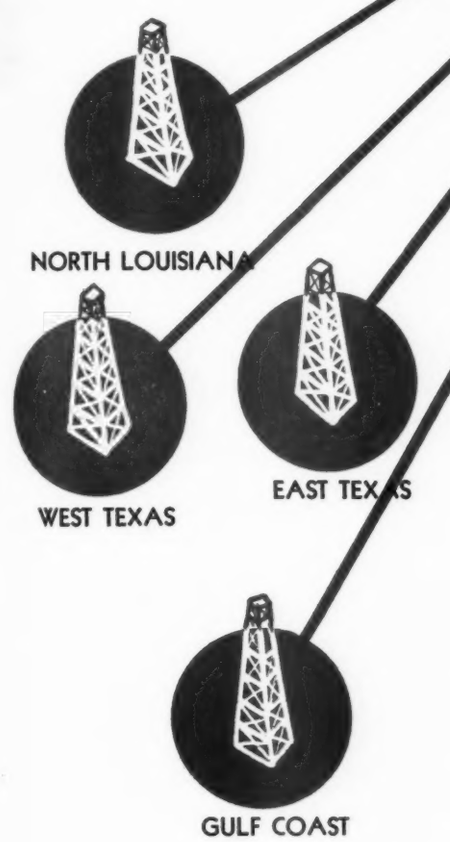
is precision made by specially constructed machinery. The pipe perforations are uniform in size and spacing. All burrs around them are carefully removed before winding the wire.

Special wire wrapping machines automatically space and lug the wire to form uniformly accurate openings from 4/1000 of an inch up. Micrometer controlled sizing rollers check and verify the openings between the successive wraps of the wire.

The Layne & Bowler Company
Houston, Texas.

THE LAYNE WIRE WRAPPED SCREEN

A SUPPLY HOUSE THAT REALIZES THE IMPORTANCE OF A RUSH Order



KNOWING THAT the right tool, at the right place, at the right time often means the saving of the entire investment in the well.

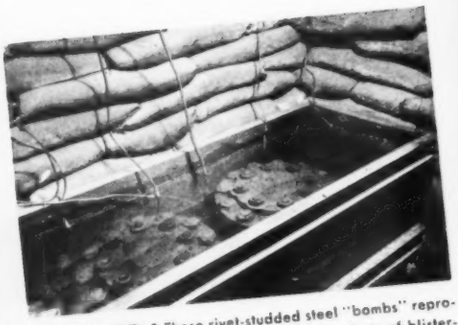
- NORVELL-WILDER does everything in its power to cooperate with oil men in emergencies.
- LARGE STOCKS IN CONVENIENT WAREHOUSES assure getting equipment to the lease **on time.**
- Appreciative, friendly service—Day or Night.

ALWAYS CALL THE NORVELL-WILDER MAN... *first*

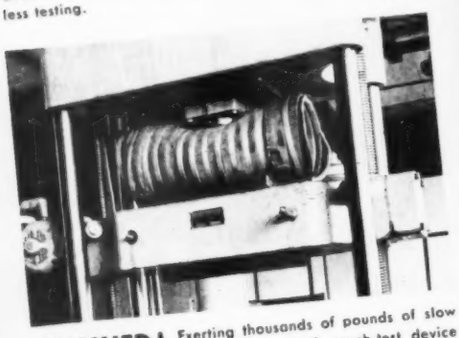
Norvell-Wilder *Supply Company*

EXPERIENCE OF MORE THAN A QUARTER OF A CENTURY

SERVING LEADING OIL COMPANIES AND OPERATORS

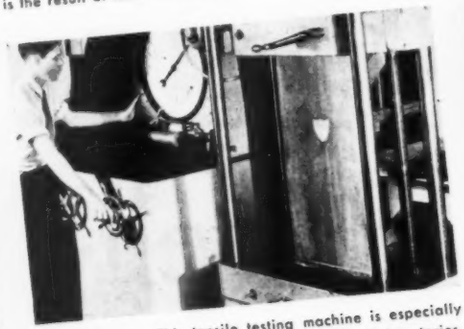


BOMBED! These rivet-studded steel "bombs" reproduce the deteriorating effects of blistering heat and months of exposure. Packings or other mechanical goods are subjected to oxygen under tremendous heat and pressure. The durability of U. S. Packings and all U. S. Rubber Mechanical Goods is attributable to this merciless testing.

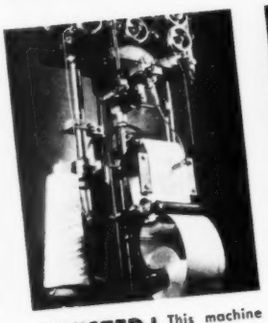


CRUSHED! Exerting thousands of pounds of slow pressure, this U. S. crush-test device pre-determines the resistance and resiliency of metal reinforced U. S. Oil Suction and Discharge Hose. That's how we know U. S. barge and dock loading hose for the oil industry will stand up under terrific abuse.

TORTURED! This duck tensile testing machine determines the stretch and strength of the fabric used in U. S. Rubber Mechanical Goods by pulling it to pieces in jaws of steel, while a sensitive indicator records its performance. The long life and wearing quality of U. S. Air Hose, Steam Hose and other mechanical goods is the result of tests like these.



PULLED! This tensile testing machine is especially designed for U. S. Rubber laboratories. Capable of a pull of 25 tons, it is so delicately balanced that it registers a few ounces. Here the virtually stretchless and unbreakable quality of U. S. Conveyor and Transmission Belting is proved in advance of production and sale.



TWISTED! This machine tests the tensile strength and stretch of strands of cord used in the construction of U.S. Super Royal Cord Air Hose, U.S. Royal Cord Belts.

STRAINED! This dynamometer registers the efficiency of U. S. Royal Cord and other transmission belts under varying tensions. It measures the horsepower delivered by the belt at different speeds under conditions simulating actual field operation.

BOMBED! CRUSHED! TORTURED!

Performance Value of U. S. Rubber Mechanical Goods Proved in Advance by Scientific Torture Tests in U. S. Research Laboratories!

GUILLOTINED!

This is the guillotine test. A blunt-bladed block drops from a pre-determined height on a length of inflated air hose; the laboratory equivalent to the impact of a truck wheel or falling rock. This test would "break the back" of an ordinary hose, but U. S. Super Royal Cord Air Hose comes through with flying colors!

In steaming jungles . . . on vast U. S. Rubber plantations . . . in million dollar research laboratories, U. S. Rubber engineers are wresting from rubber and metal and textiles the new processes and new technologies that produce new U. S. Rubber Goods for industrial use.

Tremendous Achievements

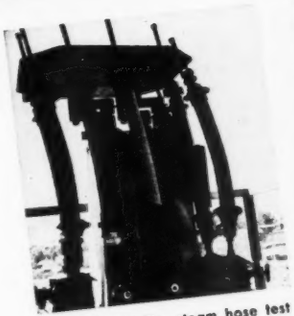
The notable achievements of these anonymous men of the test-tube and slide-rule form a long roll of "firsts" in tires, hose, belting, packing, insulation, and the bonding of steel and rubber. For *every* year sees the birth in U. S. Rubber laboratories of hosts of new rubber alloys, compounds, and products that cut industry's costs, eliminate waste, speed production, and create progress!

Performance—Proved in Advance

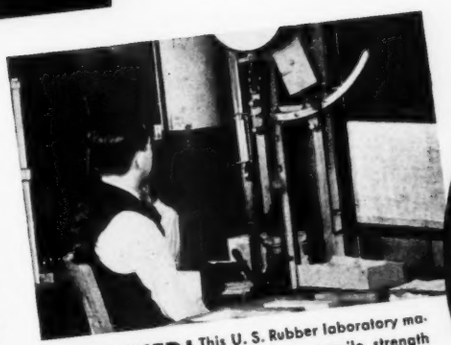
U. S. Rubber's service to industry is too broad to be defined by specifications, too vital to be written in terms of price. It lies in a matchless knowledge of the chemistry of rubber coupled with a quality of craftsmanship that demands proof of product performance — in advance. On these pages are shown a few of the U. S. Rubber laboratory "torture tests" that safeguard the investment of the purchaser by mercilessly seeking out every product flaw and every performance weakness in advance of production and sale.

This is what we mean when we say that U. S. Rubber Mechanical Goods have built into them—

SERVICE BEYOND PRICE AND SPECIFICATIONS



FLEXED! The steam hose test rack! Blasts of superheated steam attack, flex, and vibrate lengths of U. S. Matchless Steam Hose while they are exposed to sun, rain, heat, and cold.



STRETCHED! This U. S. Rubber laboratory machine tests the tensile strength and other physical properties of rubber compounds under varying loads. From tests of this sort, the superior materials used in U. S. Permobond Rubber Tank Linings are developed for industrial uses.

United States Rubber Company

*United States Rubber Products, Inc., New York, N. Y.

Whether you drill a well 1200 or 12,000 feet deep SCHLUMBERGER is equipped to serve you

LET'S GET THIS MUD BUSINESS STRAIGHT!

WEIGHT — What is the heaviest mud weight on the market?

WRITTEN FIELD REPORTS — What manufacturer first furnished operators with written field reports on drilling mud conditions?

VISCOSITY — What mud produces high weight with low viscosity?

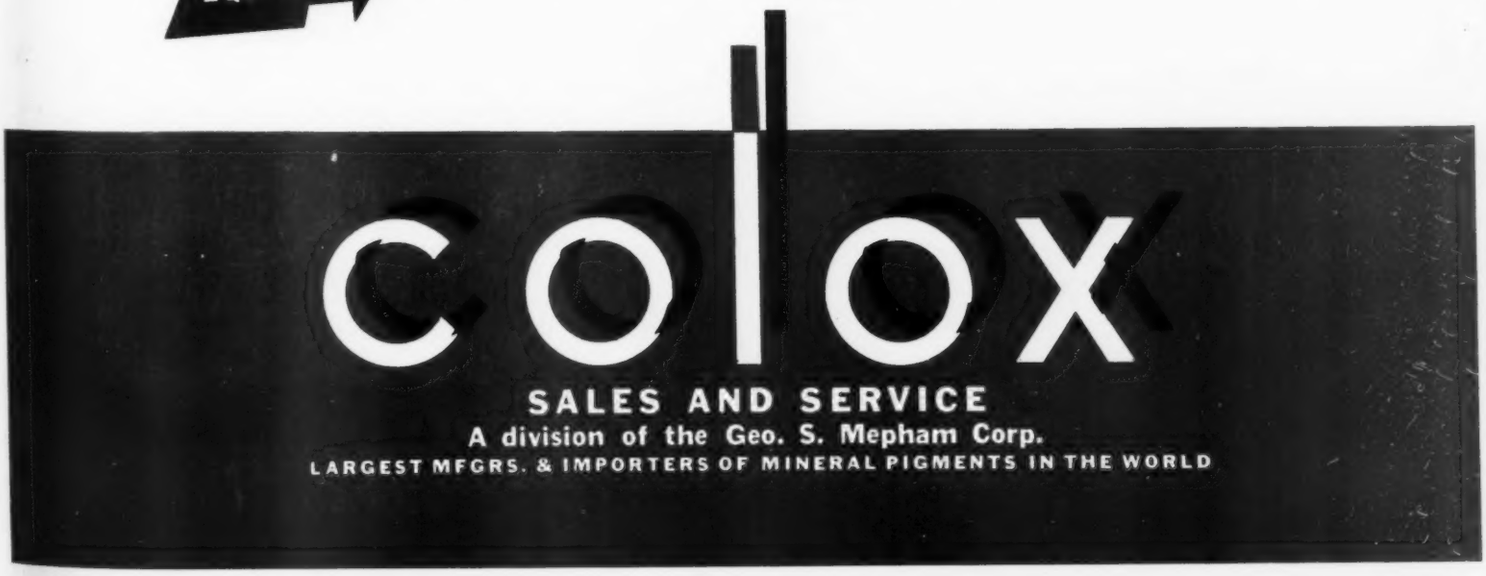
ENGINEERING SERVICE — Who first gave the industry an engineering service as an aid to proper use of commercial mud?

FIELD EQUIPMENT — What Manufacturer of Weight Material first used laboratory equipped cars in the field?

COLOX EXCELS — WITHOUT EXCEPTION

COLOX

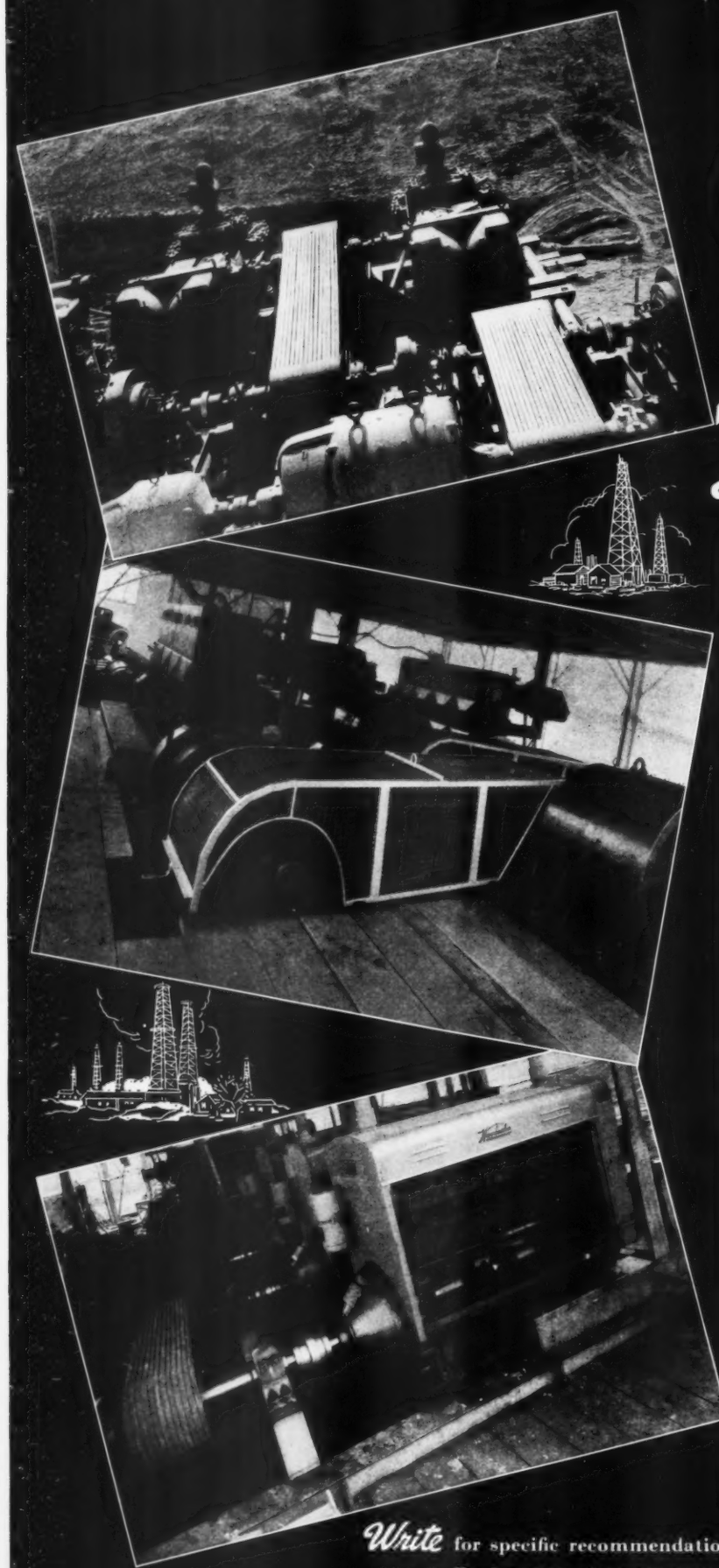
EXCELS IN ALL THESE IMPORTANT FEATURES



SALES AND SERVICE

A division of the Geo. S. Mepham Corp.

LARGEST MFGRS. & IMPORTERS OF MINERAL PIGMENTS IN THE WORLD



OIL FIELD Clutches FOR OIL FIELD Diesels

In oil field service Twin Disc Clutches have met with the same success and wide application as the Diesel engine itself. And for the same reasons. Twin Disc Clutches have *proved* their economy, flexibility and dependability.

At high or low speeds... intermittent or continuous operation ...Twin Disc Clutches or Power Take-Off Units transmit the engine's full horsepower, insuring quick, smooth response to demands of acceleration or sudden increased load.

Twin Disc engineers' fifteen years of experience in the oil fields and intimate knowledge of the industry's requirements are at your disposal. It costs you nothing to consult them.

TWIN DISC CLUTCH COMPANY
1328 RACINE ST. RACINE, WISCONSIN

SALES AND SERVICE OFFICE
310 EAST 4th ST. TULSA, OKLAHOMA

Write for specific recommendations.
Engineering data on request.

TWIN DISC CLUTCHES

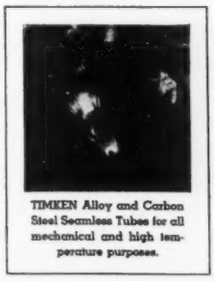
X-RAY VIEWS OF MODERN OIL WELL BLOCKS

When the sheaves of crown and travelling blocks are mounted on TIMKEN Bearings smooth, dependable performance is assured no matter how heavy the loads nor how high the speeds.

Lubrication is no problem with Timken-equipped blocks because the bearings are completely enclosed. Thus the lubricant is retained indefinitely while wet and dirt are kept out.

With the sheaves always turning freely there is less wear on cables. The prolonging of cable life is one of the most important advantages of blocks equipped with TIMKEN Bearings.

When buying new blocks of any type—also draw works, rotaries, drilling and pumping engines, pumps, swivels or any kind of oil field equipment—it will pay you to specify Timken-equipped.



TIMKEN Alloy and Carbon Steel Seamless Tubes for all mechanical and high temperature purposes.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

Manufacturers of Timken Tapered Roller Bearings for automobiles, motor trucks, railroad cars and locomotives and all kinds of industrial machinery; Timken Alloy Steels and Carbon and Alloy Seamless Tubing; and Timken Rock Bits.

TIMKEN

TAPERED ROLLER BEARINGS

1925

PIONEERS THEN

A REFRACTION SHOT

A REFLECTION SHOT

1937

VETERANS NOW

PETTY

GEOPHYSICAL

ENGINEERING CO.

SAN ANTONIO • TEXAS

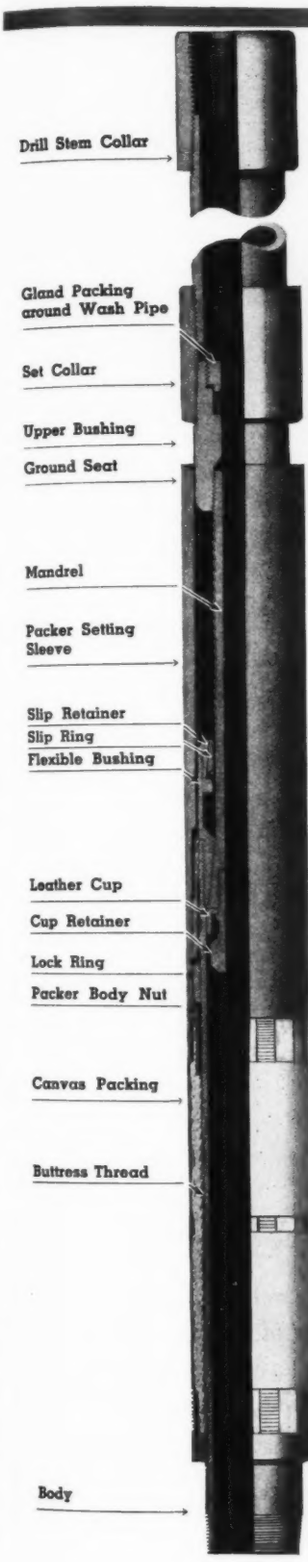
"12 YEARS' SEISMOGRAPH WORK WITH NO DISSATISFIED CLIENTS"

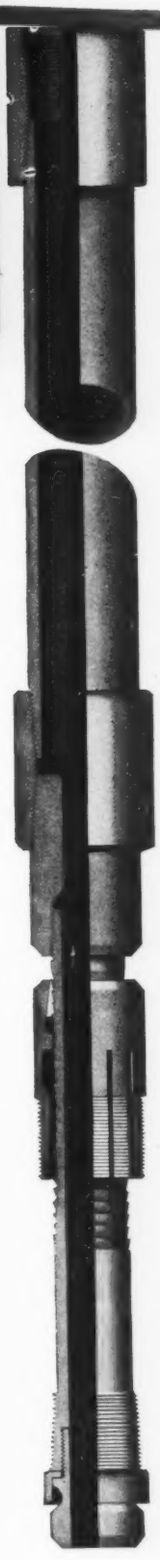
T·I·W

LINER PACKER

and

SETTING or LETTING-IN TOOL





LONG PREFERRED BY MAJOR OPERATORS BECAUSE OF ITS SIMPLICITY OF OPERATION AND EFFICIENCY

NO LEAD USED ON T-I-W PACKERS

. . . as a lead seat when once moved will leak and cut out, as it is not resilient and has no take-up.

EASY TO REMOVE

. . . simply catch with taper tap or spear and rotate to the right contracting canvas to its original size and allowing packer to be easily removed from the well.

●

DECIDED ADVANTAGES OF T-I-W SETTING TOOL

EASY TO RELEASE AND SET PACKER . . . as threads are right hand and screw down instead of up as tools with a left hand thread do. With left hand thread tools, tension in the pipe is often insufficient to allow unscrewing upward, resulting in the liner being pulled out of the well.

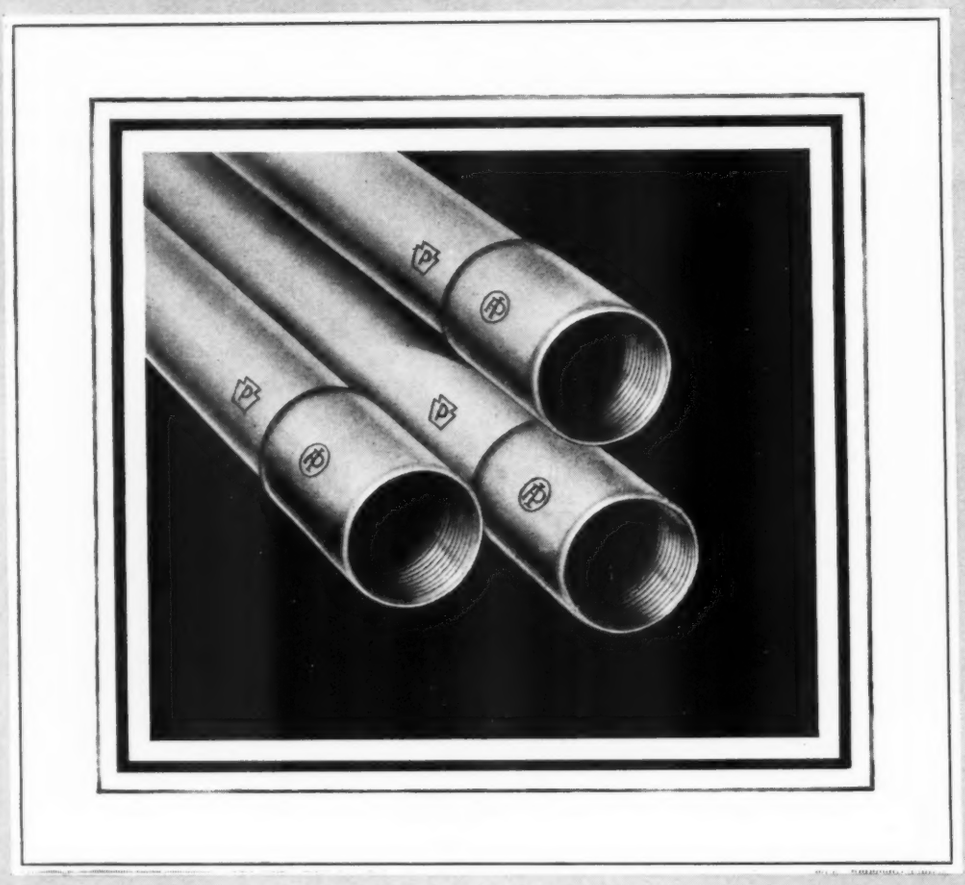
When released, the tool continues down until setting collar rests on top of setting sleeve, forcing same down until canvas is firmly compressed.

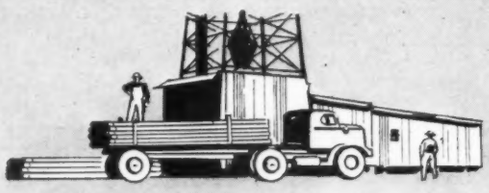
Be Safe—Be Sure

SAVE TIME and MONEY BY USING T-I-W

TEXAS IRON WORKS

1401-1423 *Maury Street* HOUSTON, TEXAS





. . . ***WITHOUT A DOUBT*** Purchasers can order *Pittsburgh Seamless* without any doubt as to its dependability in service. Such doubts have been decisively erased not only by the inherent freedom of seamless from the potential weaknesses of welded tubular products, but by the many inspections and tests that have accompanied the *Pittsburgh* product from the manufacture of the pig iron through the steel making processes to the final approval of the finished tubes. Rigid standards assure the desired degree of perfection.

PITTSBURGH STEEL COMPANY · PITTSBURGH, PA.

New York Detroit Chicago St. Louis Houston Tulsa Los Angeles San Francisco Charlotte

Export Distributor: Lucey Export Corporation, New York, N. Y., U. S. A.

Pittsburgh Seamless

DRILL PIPE · CASING · LINE PIPE · OIL WELL TUBING

THERE IS NOTHING SUPERIOR TO SEAMLESS

OFFERING EXPERT SEISMOGRAPH CREWS FOR CONTRACT WORK,
SPECIALIZING IN THE GULF COAST PROVINCE,
AND COVERING (THROUGH SUBSIDIARY COMPANIES) THE
UNITED STATES, CANADA, MEXICO AND FOREIGN COUNTRIES.

"They profit most

To render a more comprehensive service to the oil industry THE LANE-WELLS CO. has purchased Alexander Anderson Inc. Since 1924 the Anderson organization has built up an enviable reputation for accurate oil well survey and directional drilling control facilities. The personnel tools instruments and laboratories of Alexander Anderson Inc. will continue their consistently reliable work under Lane-Wells engineering direction. Such engineering ability and technical knowledge as may be possessed by THE LANE-WELLS

who serve best . . . "

CO. will be devoted to furthering this service

and developing any new or improved processes not already covered under Anderson patents Bill Lane and Walt Wells reiterate their pledge to give the drilling and production divisions of the oil industry the best service at reasonable prices.

THE LANE-WELLS CO.

Complete Oil Well Survey and Perforating Service

LOS ANGELES, CALIFORNIA • NEW YORK CITY, NEW YORK

THE LANE-WELLS CO. OF TEXAS • HOUSTON & CORPUS CHRISTI • THE LANE-WELLS CO. OF OKLAHOMA • OKLAHOMA CITY & TULSA

Important POINTS TO LOOK FOR IN IRON BODY GATE VALVES

When you buy Iron Body Gates you can forestall much trouble and expense by insisting that they embody the following important features:

Sound tough castings that will safely withstand operating pressures and temperatures.

Uniform interchangeability of parts, so that any replacement or repair part will be exactly the same size as that which is to be renewed.

Disc of solid construction that will not distort under temperature variations.

Heavy renewable bronze seat rings with strong deep-cut threads to insure tight seating in the body without springing.

An *ample number of substantial lugs* on seat rings to facilitate renewal.

Bronze bushings between the bronze stem and iron parts of valve, to prevent corrodible contact and consequent scoring of stem and packing, which causes leaky stuffing boxes.

The disc so perfectly guided that it rides straight and true to its seat without chattering or dragging on seat rings, thus insuring tight closure and longer seat and disc life. To insure this perfect guiding, *both the grooves in the disc and the ribs in the body must be accurately machined.*

The sure way for you to obtain *all* these service-giving and money-saving features is to specify Lunkenheimer Iron Body Gate Valves. By their every-day efficient and satisfactory performance they effect substantial reductions in maintenance expense and valve costs.

"AMERICA'S BEST" SINCE 1862

Available through Lunkenheimer distributors in all industrial centers.

THE LUNKENHEIMER CO.
"QUALITY"
CINCINNATI, OHIO, U. S. A.
NEW YORK CHICAGO
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Buy QUALITY—Buy LUNKENHEIMER

6-75-91

IF YOU'RE ON THE GULF COAST YOU'RE NEXT DOOR TO Eastman

For Eastman Service—surveying, side tracking, directional drilling, oriented cores, oriented whipstocks—pick up your telephone and call the nearest Eastman representative.

DALLAS, TEXAS—R. F. Bolton, telephone 7-3220.
HOUSTON—E. L. Potts, telephone Lehigh-0155.
CORPUS CHRISTI—E. L. Sanders, telephone 5282.
LAFAYETTE—W. G. James, telephone 541.
RODESSA—Mark D. Jackman, telephone 77, Atlanta, Texas.

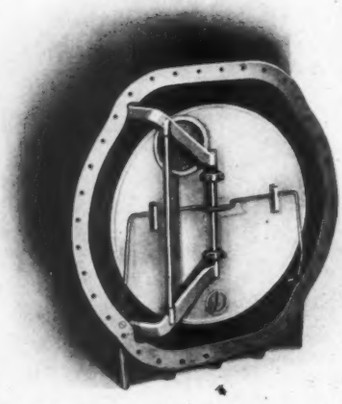
Eastman OIL WELL SURVEY CO.

General Offices: DALLAS, TEXAS

LONG BEACH HOUSTON OKLAHOMA CITY

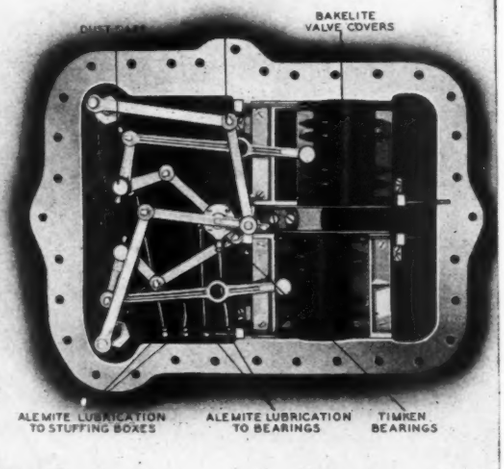
To the last *detail* . . .

After all, the accuracy and the economy of a meter over a period of years hinge not upon just one or two outstanding features . . . but upon every detail of design, materials, construction. METRIC IRONCASE METERS give you many outstanding features plus painstaking engineering to the last detail! . . . such as the body construction of fine gray iron cast in one piece to prevent internal leaks, and specially processed inside to resist corrosion.



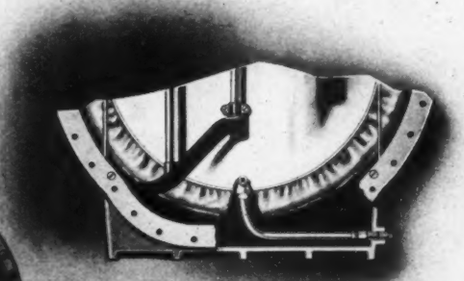
The back disc of the Metric Ironcase Meter diaphragm is fastened rigidly to middle partition. In the 500-B Ironcase Meter here illustrated, the step for the lower end of long flag rod is equipped with Timken bearings, that are Alemite-lubricated. Another distinctive feature is the full bellows, to insure accuracy throughout the entire Ironcase line.

This Slide Valve construction . . . characteristic of 500-B and 250-B Ironcase Meters . . . shows the reduced angular movement and the features of design which lessen friction and prolong wear. Special materials and metal alloys are used for valves and valve seats. Dust caps also protect the Alemite-lubricated bearings. Friction loss is cut to a minimum.



Write for information on Base Pressure Index or Base Volume Index which give a corrected reading for pressure or for pressure and temperature combined.

TYPE 500-B
With Base Pressure Index



Adequate provision for draining condensate from diaphragm and case interiors, contributes to efficient diaphragm action. The illustration shows drain connection . . . leading from the bottom of diaphragm to outside of case . . . utilized in Ironcase Meters 80-B and larger. Ironcase diaphragm leathers . . . in form, quality, special tanning and oil treatment . . . also are a highly important factor in accurate gas measurement.

ESTABLISHED 1836

AMERICAN METER COMPANY

INCORPORATED

Measurement and control of Gas, Oil, Steam, Air and Liquids

METRIC METAL WORKS *ERIE, PENNSYLVANIA*

825

These and other important features fully described in Catalog EG-40